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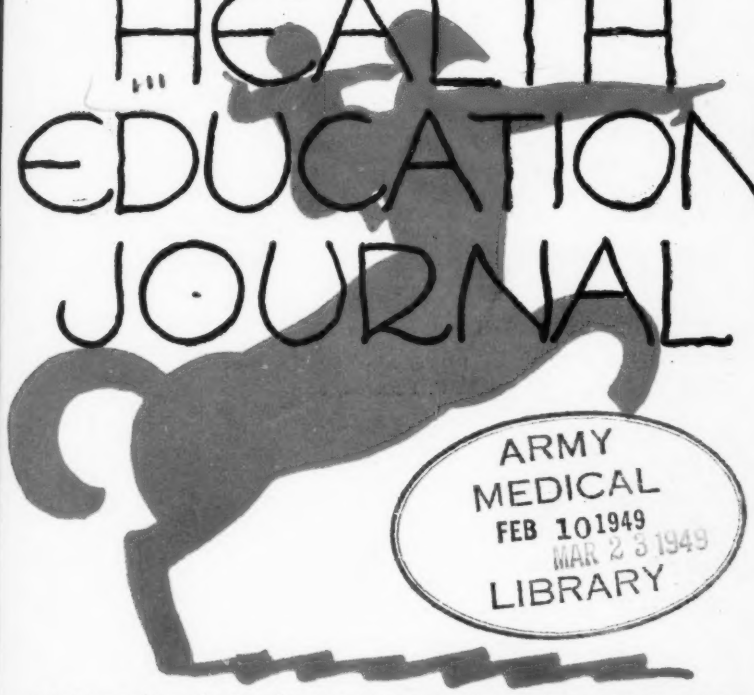
THE HEALTH EDUCATION JOURNAL



ARMY MEDICAL
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	Page
THINKING IN PERSPECTIVE	1
THE NATIONAL HEALTH SERVICE	2
HEALTH EDUCATION IN THE UNITED STATES	7
SOME PHYSICAL ASPECTS OF HOUSING	12
THE HISTORY OF INFECTIOUS DISEASES IN ENGLAND	19
RELIGION AND HEALTH	22
AUDIO-VISUAL AIDS IN HEALTH EDUCATION	29
MILESTONES IN MEDICINE—5	33
MENTAL HEALTH AND GROUP RELATIONS AT WORK	35
HEALTH EDUCATION BY FILM IN AFRICA	39
REASONS FOR REFUSING DIPHTHERIA IMMUNISATION	43
FILM STRIP NOTES	REVIEWS

CENTRAL COUNCIL FOR HEALTH EDUCATION

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The Central Council for Health Education is maintained by the Ministry of Health, the Ministry of Health and Local Government of Northern Ireland and Local Authorities in England and Wales and Northern Ireland to advise and assist Local Authorities in their health education work.

Its headquarters are in Tavistock House, Tavistock Square, W.C.1, and it has an Area Office, with an Area Representative in Belfast.

The Central Council publishes the *Health Education Journal*, the *Nutrition Bulletin* and a wide range of health education material. It will shortly issue a health exhibit to all Local Health Authorities. And every two or three months it provides, free of charge, two-day courses in health education for various professional groups at ten university centres.

Health Education in Scotland

The Secretary of State for Scotland recognises the Scottish Council for Health Education as the responsible body for assisting Local Authorities in Scotland, and inquiries concerning health education in Scotland should be made to the Secretary and Treasurer, The Scottish Council for Health Education, 3, Castle Street, Edinburgh, 2.

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The
HEALTH EDUCATION
JOURNAL

A Quarterly for all who are interested in Health

VOL. VII. JANUARY 1949 No. 1

THINKING IN PERSPECTIVE

THE pool of knowledge is now so wide and deep that no one can absorb it all. And the pace of modern life tends to limit our thinking to the pressing and the present. More often than not, therefore, we are mentally out of perspective in both time and space.

Unfortunately, professional training exaggerates rather than counteracts these tendencies. Knowledge is broken down into convenient but arbitrary divisions, and is tested by the ability to regurgitate it unchanged. As a result we enter our professions concerned more with subjects and teaching techniques, or with disease processes and medical, surgical and nursing skills than with the nature and needs of those entrusted to our care, and the nature and effects of the physical and cultural influences surrounding them. And thereafter the pressure of our immediate professional responsibilities inclines us to continue our studies in depth rather than in width.

We must recognise that these tendencies limit our power and our usefulness. We are right to suspect loose and superficial thinking that is not based on a mastery of the subject matter. But study can be too atomic and insufficiently synthetic. The best minds range widely, and survey knowledge from a height that enables them to discriminate between the significant and the insignificant, and, having done so, to see the salient points in their proper and total relations. It is this capacity that gives their thinking an apparently intuitive quality.

Thinking in perspective is especially important in health education. Mind cannot be separated from body, the individual from his fellows, the organism from its environment, the present from the past and the future. We must therefore constantly seek to broaden our knowledge and to reorient ourselves by considering afresh the true nature of man, the real purpose of our daily work, and the relative importance of our various tasks.

Hlth. Educ. J., 1949, 7, 2—6

THE NATIONAL HEALTH SERVICE

By N. Gebbie, M.D., D.P.M., D.P.H., *Medical Officer of Health, City and County of Kingston upon Hull.*

The changes in Public Health which we are witnessing are a part and a very important part of the changes in the outlook of the people towards social security.

The Medical Officer of Health today finds himself and his staff as social reformers on the grand scale. He has certainly travelled far since the ' glorified plumber ' days of the Public Health Act of 1875.

The recognition of the importance of health is no new thing. In the ancient civilisations of Crete, Greece and Rome a high standard of physical health and beauty was eagerly sought ; and the quality of the baths, lavatories, housing and town planning shows that communal sanitation was far from neglected.

However we need go now no further in retrospect than the latter half of the 18th Century and the beginning of the 19th Century. At that time the attitude of the people in this country was beginning to change. Their consciences were being stirred by such reformers as Bentham, Mill, Dr. Southwood Smith, Edwin Chadwick and the Earl of Shaftesbury. People were beginning to ask " Why should disease take such a heavy toll of life ? " and " What can be done to lessen the ravages of epidemics of such diseases as cholera, typhus, plague and smallpox ? "—diseases we now refer to as plagues of the past.

Chadwick's ' sanitary idea ' had penetrated the barriers of *laissez faire* and the era of Humanism or Humanitarianism had begun. Other reforms were in progress at the same time, notably Prison Reform (John Howard) and Factory Reform (Antony Ashley Cooper—Factory Act, 1833).

This was the period of the Industrial Revolution with the improvements in textile machinery associated with the names of Hargreaves, Crompton, Arkwright and others, and in 1785 we had the introduction of steam power.

Public Health Law as represented by the Public Health Act, 1875, dealt almost exclusively with environmental hygiene—drainage, sewerage, water supplies, removal of refuse, nuisances, etc.

Thirty years later the emphasis was to swing from environmental to

personal hygiene. Why should so many children on beginning their school life be unable, because of some physical or mental defects, to benefit from the education provided by the State ?

The Education (Administrative Provisions) Act, 1907, was passed and gave us the School Medical Service which by the Education Act, 1944, became the School Health Service.

Positive Health

Emphasis be it noted was still on disease—on departures from health, on disabilities and defects. Then, in 1937, came The Physical Training and Recreation Act which shifted the emphasis from disease to health. And we see the pendulum swing towards *positive health*. The sense of public duty has widened and deepened since the humanitarianism of the 18th and 19th Centuries, and we now ask what measures can we adopt to make the healthy person fully efficient ?

We know that prevention of disease is not enough by itself. " A preventive policy will preserve health," but, today, our aim and our purpose must be " to bring out the best in each according to his powers ".

Health education has assumed a place of importance in our ' battle for health '.

Professor C. E. A. Winslow of Yale' has described the changes as falling within the following three periods :—

(1) Empirical environmental sanitation—1840 to 1890.

(2) Scientific Control of communicable disease—(bacteriology) 1890–1910 (N.B. Pasteur and Lister).

(3) The new technique with education the keynote.

" The discovery of popular education as an instrument in preventive medicine made by the pioneers in the tuberculosis movement has proved almost as far reaching in its results as the discovery of the germ theory of disease thirty years before."

The way was thus opened for action by parliament which would reflect the modern view of *positive* health, and would ensure the application of social hygiene to the people in their own homes, e.g. an extension of periodic medical surveys—health checks—especially to those in later adult life to permit of the scientific study of preventive measures in heart disease, diabetes, rheumatism, and the degenerative processes, e.g. cancer.

But unfortunately the National Health Service Act is essentially a 'treatment ' act—curative and not immediately preventive in outlook. The public and the doctors should be made ' health-minded ' and not ' disease-minded'. Perhaps this is the first of a series of National Health Service Acts.

What does the National Health Service Act 1946 mean?

It is " An Act to provide for the establishment of a comprehensive health service for England and Wales, and for purposes connected therewith ".

There are six parts dealing with :

(1) Central administration.
(2) Hospital and specialist services.
(3) Health services provided by local health authorities.
(4) General medical and dental services. Pharmaceutical services and supplementary ophthalmic services.
(5) Special provisions as to mental health services.
(6) General—financial, administrative and supplementary provisions.

The machinery which has been set up to administer the various services provided under the Act is on the three-tier system, Central, Regional and Local.[a]

Central

Responsibility for the service rests with the Minister of Health who will have the assistance in central administration of a Central Health Services Council, with Standing Advisory Committees.

Regional

Throughout the country there have been established Regional Hospital Boards centred upon Universities, e.g., in Yorkshire there are two Regional Hospital Boards, one at Leeds and the other at Sheffield. These Hospital Boards will be responsible for the Hospital and Specialist Services of the regions.

They will be responsible for planning the hospital and health services of the region and for initiating and co-ordinating locally the general hospital policy outlined in the Act.

Hospitals with medical teaching schools will be separately administered by Boards of Governors.

Local

(1) Hospital Management Committees. Other hospitals in each region will individually or in groups be managed by Hospital Management Committees with at each hospital a House Committee responsible for its day to day administration.

(2) Executive Council. In each part of a Region there has been set up an Executive Council to be responsible for the General Medical Practitioners' Service ; including in due course the medical etc., staffing of

Health Centres ; the Dentists' Service ; the Pharmacists' Service and the Ophthalmologists' Service.

(3) Health Authorities. Each County Council and County Borough Council has appointed a Health Committee which will be responsible for providing the following services under the Act :—

Health centres, care of mothers and young children, midwifery, health visiting, home nursing, vaccination and immunisation, ambulance services, prevention of illness, care and after care, domestic help, mental health service.

The provision of Health Centres has been postponed by the Minister indefinitely in consequence of the shortage of labour and materials. Health Centres are undoubtedly essential for the full realisation of a National Medical Treatment Service. It would, perhaps, be a reasonable estimate to allow one Health Centre to each community unit of 10,000 persons. Some would be major centres with specialist services, X-Rays, pathology, etc., available in addition to general medical practitioner services, dentistry, district midwifery, minor ailments clinics, school health services, maternity and child welfare clinics, health, education and social welfare. Professional staffs will not be available in sufficient numbers on the appointed day adequately to provide the services as set out in the Act. There is a shortage of doctors, dentists, hospital beds, nurses, midwives, health visitors, district nurses and domestic staffs. The shortage is acute under present conditions and it is certain that the staffs available will be unable to cope with the additional demands which are sure to be made upon the services by the public after July 5th.

Future Development

The members of the public are certain to experience some degree of disappointment if they expect a complete service—" a comprehensive health service "—to be available immediately.

The new machinery of Regional Hospital Boards and Hospital Management Committees will require time to be geared up to productive efficiency. The doctors, dentists, pharmacists and auxiliaries will need time and patience to get themselves and their patients accustomed to the new conditions.

The individual patient's wants and needs must remain paramount[3].

This indication of the scope and aims of the National Health Service Act and of its place in the pattern of social security, shows that as far as the functions placed by the Act upon local health authorities are concerned a more positive attitude towards health will be encouraged and developed.

With the family and not the individual as the unit, the Health Committee and its officers will be concerned with the problems of social medi-

cine. They will investigate the social and economic factors likely to influence the health state of the family. Housing, work, school, church, recreation and rest will all come under review. Health and morbidity statistics will be compiled scientifically and made available to all concerned with the health and social betterment of our people, and health education will be pursued with vigour. We *must* all become health minded.

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1. Winslow, C. E. A., Professor of Public Health, Yale. (1923). *The Evolution and Significance of the Modern Public Health Campaign.*
2. Scott, J. A., and Sturgess, H. A. C. (1947). *The National Health Service Act* 1946. (Eyre and Spottiswoode.)
3. British Medical Association. *The Doctor's Case.*

REGIONAL COURSES IN HEALTH EDUCATION FOR PUBLIC HEALTH NURSES

During this autumn over 1,500 public health nurses nominated by 105 local health authorities have attended the first of a series of regional courses arranged by the Central Council for Health Education for groups of natural health educators. They were students in one or other of fifteen short courses in health education, of six sessions each, that were held in Birmingham, Bristol, Cambridge, Cardiff, Leeds, Liverpool, London and suburbs (5), Manchester, Newcastle, Oxford and Sheffield, the average attendance at each centre was therefore over one hundred. The speakers were mainly professors and readers in the various medical schools specially chosen for their understanding of the problems of public health nurses and their ability to give them concrete help as well as a fresh viewpoint. Nearly all the lectures were followed by questions and discussion in which the nurses took an active part. The local medical officer of health or the chairman of the local health committee took the chair at the opening lecture, and in most centres the university or local authority generously co-operated by allowing the course to be held in a lecture hall, Council chamber, or committee room.

Since the new National Health Service Act came into being public health nurses have had their field of work considerably expanded, and the course was therefore designed to give a broad picture of the forces affecting health and of the principles and methods of health education so that they might be better able to see and to seize the increased opportunities for health education that arise in the course of their daily work. Reports indicate that the courses were warmly welcomed by public health nurses all over the country who appeared to find that they met a need in an interesting and stimulating way.

Hlth. Educ. J., 1949, 7, 7—11

HEALTH EDUCATION IN THE UNITED STATES

By W. W. Bauer, M.D., *Director, Bureau of Health Education, American Medical Association, Chicago.*

Health education really began in the United States with the organisation of the American Medical Association in 1847. At this early meeting, and in subsequent years, attention was given to public health matters and the conviction was expressed that the profession had an obligation to educate the lay public in matters relating to sanitation, hygiene and how to live. Early emphasis was placed on the evils inherent in the use of alcohol and tobacco, and doctors waxed eloquent over the harm done by wasp waisted corsets.

The first physician who served the schools in the United States was appointed in New York City in 1892 and it was about that time that the philanthropist Nathan Straus established the milk stations which brought pure milk to under-privileged babies. The great upsurge from which stems the health education programme as we know it today came about just after the turn of the century, when doctors and laymen organised to fight the great white plague and adopted as the means to finance it the idea of the Danish postmaster who persuaded his government to issue postage stamps for the fight against tuberculosis. The penny tuberculosis seal is now used, not as a government-issued stamp but a token in the form of a stamp-like seal which has made its place in the hearts of the American people so that voluntarily they buy 18 million dollars worth a year to finance the anti-tuberculosis fight.

The Role of the Voluntary Organisation

The Christmas seal may be regarded as typical of one of the great motive forces in American public health and health education, the so-called voluntary health agency. The typical voluntary agency, the National Tuberculosis Association, has been copied for organisational purposes by others. It consists of a national headquarters with state constituent societies and local basic groups or committees. The Christmas seal sale is conducted locally largely by mail with some direct personal solicitation and some mass selling, mainly in the schools. It is limited by agreement with other health agencies to the month of December. After the local expenses are paid, the proceeds are divided on the basis of 50 per cent to the state organisation and 50 per cent to the local. The

state sends 10 per cent of its share or 5 per cent of the total net to the national. The 18 million figures cited is the over-all gross, subject to expenses and the percentaged distribution described.

The Infantile Paralysis Foundation has a similar organisation. Its device, comparable to the Christmas seal, is the March of Dimes. The American Cancer Society has made its appeal for funds without any special device ; it is mainly a national organisation with only sketchy state and local organisations. The International Society for Crippled Children (*International* because it includes Canada) sells Easter seals. Other agencies such as the National Committee for Mental Hygiene, the National Society for the Prevention of Blindness and the American Hearing Society depend upon various forms of donations and bequests. The American Heart Association has some local chapters which sell seals tied up with the traditional St. Valentine's Day, when hearts are supposed to be particularly tender.

The philosophy of the voluntary health agencies is expressed in their membership which is usually mixed professional and lay. Doctors and outstanding lay leaders, successful industrialists or members of other professions constitute the leadership, and usually form the board of directors, which tend to be self-perpetuating.

The advantages of a voluntary agency are that it affords wide latitude of expression, creates a broad basis of popular support and permits freedom in research and in project experimentation free from governmental restrictions, red tape and politics. Leading citizens who scorn political life and whose services cannot be hired give freely of their time and money to these voluntary movements. They have played a significant part in health education in the United States and their counterparts can be found in Canada.

State Health Departments

British health organisation has no agency comparable to our state health departments. The United States has no agency strictly comparable to the British Ministry of Health. The nearest approach is the United States Public Health Service and other organisations on the federal level such as the Children's Bureau, the Office of Education, the Board for Vocational Rehabilitation and other agencies totalling nineteen, exclusive of the military medical services. All except the military units have some functions related to the public health. In the states, health interests are divided among health departments, departments of education, industrial departments and safety commissions. In the cities similar organisation trends are evident.

Commercial Agencies and Health Education

No picture of health education in the United States would be complete without reference to the contributions made by commercial agencies. Life insurance companies, food distributors and manufacturers of many kinds of materials and supplies have sensed the commercial advantage of making contributions to health education. These include exceptionally fine pamphlets, posters, films and other educational devices. One pharmaceutical firm has contributed a series of outstanding historical medical paintings and made wide distribution of excellent prints while circulating the originals for exhibition purposes. A manufacturer of baby foods has contributed to paediatric education and has presented instructional advertising of an educational nature to the public. Much of the educational material prepared by food manufacturers is submitted for approval to the Council on Foods of the American Medical Association.

The American Medical Association

Professional organisations make their contribution to health education. Principal among these are medical, educational, dental and nursing associations. The most extensive programme is that of the American Medical Association ; the American Dental Association also has a broad programme.

The American Medical Association makes its contribution to health education financed entirely by Association funds derived from dues and earnings. This includes a nation-wide network radio programme in co-operation with the National Broadcasting Company, now in its fourteenth year, plus a similar programme on the Mutual Broadcasting System in 1947 only, this being the Association's centennial year. Regular telecasts are conducted weekly. Electrical transcriptions prepared by the American Medical Association are distributed to radio stations through state and county medical societies, health departments and other voluntary health agencies. The Association has a Bureau of Health Education with a special division devoted to health and fitness, to which further reference will be made. In conjunction with the National Education Association, a Joint Committee was established in 1911 and still functions ; this Committee deals with health problems in education. The Association answers thousands of letters from lay inquirers, publishes a laymen's health magazine, *Hygeia,* sends speakers to meetings and helps in the organisation of health education activities by county and local medical societies.

In addition to these distinctly educational activities, the Association is active in many fields such as supervision of drugs, foods, and physical medicine appliances and in the exposure of quackery.

All the activities of the American Medical Association are based on

educational leadership ; the Association neither has nor desires any legal sanction. It is a corporation " not for profit " and its obligation toward the health education of the public is self-imposed under its Constitution which declares the principal purpose of the Association to be: " The improvement of the science and art of medicine and the betterment of the public health ".

Media in the U.S.A.

Health education in the United States uses the same media as are employed in every nation, namely, radio, posters, films, slides, exhibits, demonstrations, lectures and conferences. An interesting development is the so-called workshop in which groups of professional persons solve problems of mutual interest through a process of group thinking. Often these conferences are held in delightful scenic surroundings during the summer vacation, or at southern resorts in the winter, thus accomplishing two purposes at once.

An interesting new development is the so-called Community Health Council through which participation is offered to all agencies having an interest in health education or public health. The Community Health Council assumes no authority over member organisations, each of which continues to establish and work out its own policies. Nevertheless, co-ordination and co-operation are fostered and the democratic mode of procedure is encouraged.

Health Education in the Schools

Health education in the schools is carried on by the educational authorities, but health service (examinations, immunisations, epidemic control and follow-up for the correction of defects) are assigned by law in some states to the public health authorities.

Health education is mainly under the direction of personnel trained both in physical education and in health education, but science teachers and those in home economics and the social studies also make their contribution. Lately the trend is toward providing special health teachers for secondary schools. In the lower grades specific time allotment per day or per week, with text books graded like readers, is the usual rule. At this level health teaching is usually done by the classroom teacher. In higher grades and secondary schools the health instruction is more likely to be integrated, though specific classes under trained health educators are on the increase. In some instances, health education is only a substitute for physical activity at times when inclement weather, crowded gymnasium facilities or the condition of individual students forbid the activity programme.

There is stirring in the United States a great ferment looking to the improvement of health education in the schools. In this, educational leaders are in the vanguard, and the medical profession is right beside them. The American Medical Association has established a Division of Health and Fitness in the Bureau of Health Education, to promote national fitness through health, with specific application to health education and health service in the nation's schools. The approach is a consultative one; no programme has been promulgated. Expert counselling, educational as well as medical, is available to school officials gratis from staff members of the Fitness Division. Results are already becoming apparent, after about a year's effort.

The American Way

There are many gaps and deficiencies, some over-lapping and duplication and probably some competition in the American system of health education. *We* recognise its shortcomings, and are striving to overcome them. It might not work anywhere else but it is peculiarly American and we like it.

BIOGRAPHICAL NOTES

W. W. BAUER, B.S., M.D.—Health Commissioner, Racine, Wis., 1923-1931. Since 1932, Director, Bureau of Health Education, American Medical Association, and Associate Editor, *Hygeia*; in charge of American Medical Association radio programmes. Author or co-author of nine books and of numerous magazine articles pertaining to health. Member of Committees and Advisory Boards on health and health education. 1947 Recipient of the Elisabeth Severance Prentiss National Award in Health Education from the Cleveland Health Museum.

NICOLAS GEBBIE, M.D., D.P.M., D.P.H.—Medical Officer of Health, City of Kingston upon Hull; Port Medical Officer of Health, Hull and Goole Port Health Authority. Formerly Medical Officer of Health, Borough of Hyde; and County Borough of Stockport, Cheshire. Fellow of the Society of Medical Officers of Health and Past President of the Yorkshire Branch of the Society. Fellow of the Royal Sanitary Institute. Fellow and Examiner of the Royal Institute of Public Health and Hygiene. Previously External Examiner in Public Health, Glasgow University.

HENRY A. WILSON, D.D.—Bishop of Chelmsford since 1929. Rector of Cheltenham and Canon of Gloucester, 1916–1929.

Hlth. Educ. J., 1949, 7, 12—16

SOME PHYSICAL ASPECTS OF HOUSING

By T. C. Angus, D.F.C., D.Sc., A.M.I.E.E., A.M.I.H.V.E., *Lecturer in Department of Applied Physiology, London School of Hygiene and Tropical Medicine.*

Since the house is an appliance, or a machine, for living in, when examining the physical factors that go to make up comfortable living conditions in a home we should refer back to the physical needs of the human body.

A person in his or her home may be sleeping, resting, playing, engaged in sedentary work or in light manual work—so in every requirement excepting the two last-named we may expect the home environment to be different from that of the office, the school or the factory. We may consider that, to afford a properly balanced life, the home environment should differ from the working surroundings.

So in our homes we may well expect our surroundings to be less stimulating, less vivid, and ' cosier ' than those in which we work, and so more conducive to restful comfort rather than to a high degree of activity.

It will not be questioned that the first necessity for a house in northern Europe is to protect its inhabitants from cold and damp. The clothed body may be chilled in several ways by wind and weather: by merely being in cold air ; by the augmenting of this cooling effect by movement of the cold air (draughts and winds), and by loss of body heat to cold walls, cold floors and cold ceilings by radiation. This last-named effect is not always obvious and calls for explanation. The sun at a vast distance from the earth warms the lands and seas on to which its rays fall but does not warm the air through which its rays pass to any appreciable extent ; the air on mountain tops is very cold even in brilliant sunshine. In the same way, our warm bodies and clothes can lose heat by radiation to cold walls, floors, or cold ceilings even if the air of the room itself is warm. This is because air is transparent to radiant heat.

The practical result of this is that we may be uncomfortably chilled by sitting under the influence of a cold wall or a large cold window, even if the air of the room as a whole can be kept reasonably warm by a fire, stoves, hot water pipes or other means. Moreover, there is also a serious down-draught from such a large, cold surface, even though it may be completely air-tight, due entirely to the falling down of air cooled by contact with the cold wall or window. This cold air will run along the floor and be felt as a draught over the feet. It should be noted that,

where hot water radiators, portable or otherwise, are used they may well be set under the windows to counteract these down draughts.

Cold floors tend to chill us by radiant heat loss in a like manner, as well as by making the feet cold by actual contact.

How Heat Can Be Lost

A particularly bad cause of the wasting of our costly and hard-won warmth is through the ceilings of top-storey rooms—bedrooms and landings. In most houses of the conventional pattern the space between the lath and plaster ceiling and the tile roof is practically at outside air temperature—for the tiles of necessity hang so loosely on the slats that air is constantly blowing in and out, cooling down the top or outer surface of the bedroom ceiling very rapidly.

Because the heat insulating properties of lath and plaster are low this means that the underside of the ceiling cannot be much warmer than the top side—so any warmth imparted to the ceiling of such a bedroom from the inside of the house rapidly finds its way out-of-doors. No wonder that our bedrooms are cold ! It is of interest to know that the plasterboard now so widely used in new ceilings and used in all war damage repairs, is an even worse heat conserver than the thicker lath-and-plaster used in earlier days.

So although we may not realise it our top ceilings are operating as large ' cooling panels ' for the top storey of the house, making it most difficult to retain any heat. In new constructions this source of heat loss is not being overlooked, and slag wool, glass fibre and other insulating materials are being applied to ceilings ; as well as to the insides of hollow walls.

It may be of interest that I have recently had the ceiling of one of the bedrooms in a very old country house insulated with two layers of bright aluminium foil. It is intended to take careful measurements of air and ceiling temperatures in this and in adjacent rooms during the winter in attempting to gauge the values in heat saving and comfort that such insulation affords. Aluminium foil, though very light, has a remarkable ability to reflect radiant heat, whilst the air immobilised in between the layers is prevented from carrying away much heat by convection. It is anticipated that interesting results may be obtained.

Damp in the walls and other parts of a house fabric accentuates cooling by radiation. This is because to warm any room in cold weather necessitates the warming of the walls and floor surfaces to a greater or a lesser extent, and if these surfaces are in the least damp a disproportionately large amount of heat has to be absorbed to warm them, because the water has to be dried out first before they can be made warmer. So a room in which the walls and floors draw up the damp from the earth

will require more fuel than a dry room to keep it at an equal temperature. It is for this reason that all brick houses are now built with ' damp courses '. These are layers of slate, bitumen or other waterproof material laid in between the bricks near to the ground level. In houses built without such a safeguard water rises up inside the walls rather as it would soak up into a sheet of blotting-paper. It is the moisture evaporating from the damp inner surface of such a wall that makes a room of a house feel cold and " dank ".

It has also been shown by American workers that people feel colder in damp air than they do in cold dry air at exactly the same temperature. The reason for this is not quite clear. The unpleasantness of damp clothes or bedding is known to every housewife, and the need to ' air ' these fabrics before use is recognised. Another physical effect of a damp or even an unheated house is that if clothing materials are left for long in a cold room in winter time (when the air is generally nearly saturated) these materials take up a considerable quantity of water vapour (technically called " regain ").

If such damp clothes are then worn the heat of the body will be called upon to evaporate a considerable weight of water before the clothing can be warmed up to a comfortable temperature. This may take some hours, causes chilling and discomfort and can have serious effects upon persons who are not very strong.

The remedy, of course, is to keep such clothes in a warmed linen cupboard or to hang them before an open fire or in the sun before using. The local rise in temperature then makes the air relatively dry, and so able to take up the moisture from the fabric.

Methods of Warming and Comparative Costs

There are five main methods used for warming houses :—

1. Open fires burning coal, coke or other solid fuel.
2. Gas fires.
3. Electric heating.
4. Central heating, in which hot water heated by a stove burning solid fuel, gas, or oil, is circulated through pipes to radiators all over the house.

In addition we must now include ' district heating ', where hot water or steam from a central station is circulated through pipes to a number of houses in any district ; but it should be noted that such a system will not provide for cooking.

In this country there is a prejudice against central heating by radiators and most people prefer an open fire. A reason for this is that hot water radiators transfer most of their heat to the air of the room ; the walls, ceiling and floors generally being at a slightly lower temperature than the air. With an open fire, gas fire or bright electric radiator, on the

other hand, most of the heat comes into the room as radiant energy which, caught by the clothing, feet and skin of the occupants is immediately appreciated as a grateful warmth. Again, the furniture within range of the fire and also the walls, unless these are very bad insulators of heat, soon have their surfaces warmed up by the radiations from the fire and so present warm surfaces to the occupants. To keep people comfortably warm then in a room heated by hot water radiators requires that the air be warmed to a higher temperature than in a room warmed by an open fire—to offset the effect of the cold surroundings, and to give a person an equal sense of warmth. It may perhaps be said that bright fires make us feel warm, whilst central heating prevents us from feeling cold.

It is generally admitted now that cool air with warm radiant surroundings is physiologically better than the reverse—warm air with cold walls ; so there is after all something to be said for the open fire.

Comparatively recently panel heating has been brought into use. Here the hot water of a central heating system is used in flat radiators of very large area rather than in the so-called ' radiators ' of the older type, which really dispose of most of their heat to the air by convection. If such large panels are placed in the ceiling many of the disadvantages of central heating, as we know it, are done away with because the lower part of the room receives low temperature radiant heat.

It is interesting to know that this system, first introduced in Europe, is now very much to the fore in the United States of America—the home of central heating by ' radiators ' of the older type.

The old-fashioned fire has two major faults: it is very extravagant in fuel and it is a main cause of our smoke-polluted city atmospheres. But designers have not been idle in this important aspect of housing and modern fireplaces, with and without cooking and water heating facilities, are now coming into production which, whilst keeping the cheerful and agreeable features of the open fire, will waste far less of the heat of the fuel and give a much better control in its use. Their more efficient burning results in less smoke. For instance, the old-fashioned open fireplace burning coal had an efficiency of about 20 per cent. ; 80 per cent. of the heat from the coal being wasted: but for an openable fire of modern design (illustrated opposite page 16) it is claimed that as much as 35 per cent. thermal efficiency is obtained. The significance of such figures, in terms of money, are shown in the table on page 17.

The methods employed by the designers of modern heating appliances to retain and regain heat that would otherwise be lost are many and ingenious ; but cannot be dealt with at any length in an article such as this. The firebricks at the back are made to direct radiant heat into the room ; the heat escaping through the back of the fireplace may be

used to warm air that will then pass into the room through special openings—or into other parts of the house ; part of the fire may be used for cooking in the same or even in another room, and hot water may be obtained either for domestic washing or for circulation to warm other parts of the house. Again, the very great rush of warm room air into the fireplace and up the chimney may be reduced in a number of ways. Such excessive ventilation has been shown to waste a good deal of heat.

Another method of heating is by paraffin oil (kerosene) in portable stoves. These are sometimes made in the form of hot water radiators. In the United States of America heavy oil (called " gas oil " in this country) has a considerable field for house heating by radiators. It can be burnt in a completely automatic furnace under a boiler from which heat is supplied to many radiators, and so requires no handling and very little attention, but it is doubtful whether the economic situation will allow us to adopt this method of warming our houses in this country for some time to come.

Relative Costs of Heating Fuels and Appliances

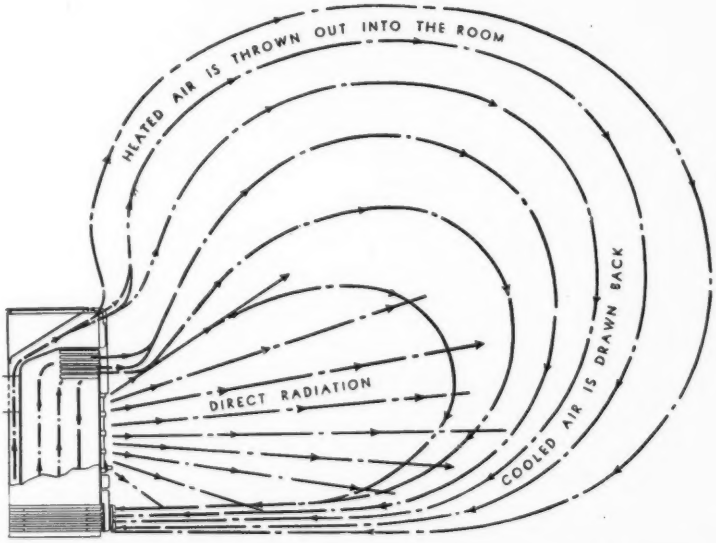
In considering the cost of heating a given room in terms of the price of the fuel and the efficiency of the appliance, it is important to bear in mind the limitations and the suitabilities of the various appliances for various uses, and not to assume that the apparatus showing the lowest cost per unit of useful heat is of necessity the most suitable. For instance, an anthracite stove may cost 7d. to give out the same amount of heat which from a gas fire costs 2s., but no one would consider lighting an anthracite stove to warm the room for breakfast if the room would be unoccupied for the rest of the day.

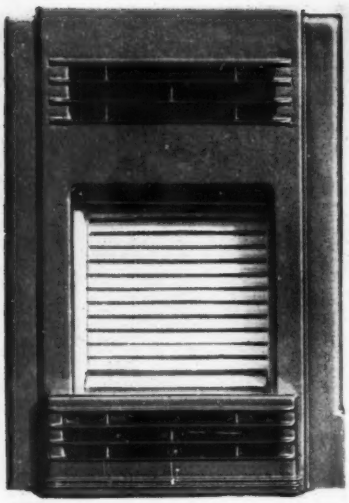
Owing to the varying prices of fuels and of electricity, and the differences in the appliances using these sources of heat, the relative costs of different methods of warming a room or a house are not easily found. Every fuel has a certain maximum heat content, or calorific value, but this is attained only when it is burned with complete combustion.

In practice no solid fuel is ever completely burned ; so against the cost of the fuel and the possible amount of heat it is capable of giving out theoretically (Columns 2 and 3 of the table on page 17) must be set the efficiency of the stove in which it is burned (Column 4).

The table gives the comparative costs of supplying a certain quantity of heat (called one therm) to a room by various warming appliances as calculated from present-day prices in the London area. A therm may be taken as the approximate amount of heat required to keep an ordinary living room at 65° for 16 hours, with an outside temperature as found in winter in this country.

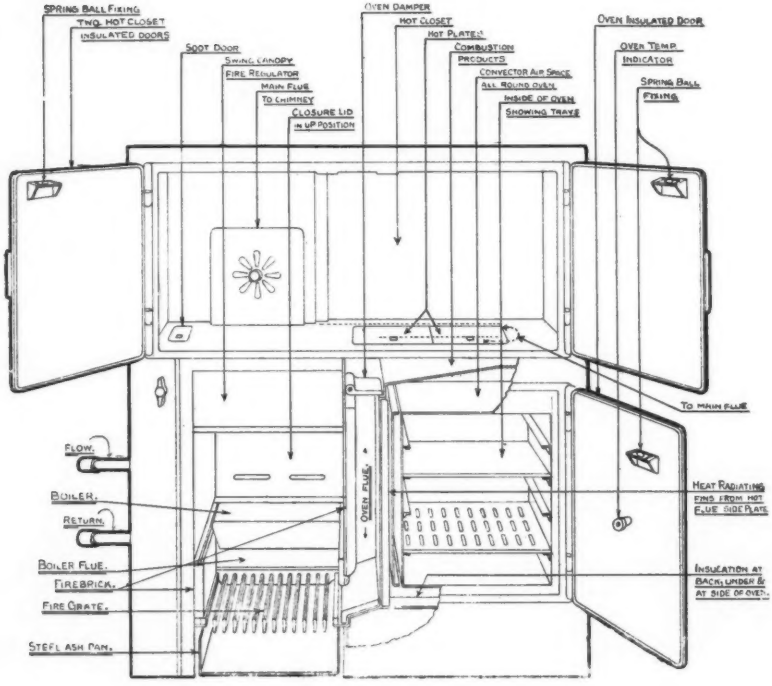
A Modern Closable Fire. Gives the desirable sensations of an open fire but can be turned into a slow combustion stove for keeping in at night. The diagram shows how much of the heat usually wasted through back and walls is sent into the room by the warm air currents.





(*Left*). A very new type of Gas Fire incorporating improved burners that do away with the possibility of "lighting back"; new radiants of improved design, and a convected heat device to improve efficiency.

(*Below*). A combination of open fire with cooking range for a kitchen living room. Cooking range is entirely enclosed when not in use, and hot water is supplied to the bath, etc.



COMPARATIVE COSTS OF WARMING METHODS

1. Fuel : Type of Fire.	2. Price London 1948.	3. Cost per therm at 100% efficiency.	4. Actual efficiency of fire.	5. Actual cost per therm.
	Per ton			
Coal : open fire old fashioned	92s. 0d.	4·11d.	20%	20·5d.
Coal : openable fire ; newest type with convector ..	92s. 0d.	4·11d.	35%	11·7d.
Coke : open grate	90s. 10d.	4·06d.	25%	16·2d.
Coke : closed stove	90s. 10d.	4·06d.	55%	7·37d.
Anthracite—special stove	110s. 1d.	4·23d.	60%	7·06d.
Radiant gas fire circa 1935 ..	—	13·0d.	45%	28·9d.
Radiant gas fire (new) with convection	—	13·0d.	60% to 65% (say 62·5)	20·6d.
Flueless gas heater (halls, etc.) ..	—	13·0d.	90%	14·4d.
	Per gallon			
Kerosene ..	1s. 3d.	10d.	90%	11·1d.
	Per unit			
Electricity	0·9d.	26·3d.	100%	26·3d.
Domestic Central Heating. Boiler ; Furnace Coke ..	Per ton 121s. 8d.	4·83d.	60%	8·05d.
Domestic Central Heating. Boiler ; automatic furnace Gas Oil	Per gallon (sp. gr. = 0·87) 11¼d.	6·60d.	70%	9·43d.

Note.—When considering the cost to the consumer of heating by electricity or gas the appropriate allowances for standing charges and two-part tariff must be made. Such tariffs are devised to balance the costs of the less profitable loads, but the consumer has to divide the standing charge into the units, or cubic feet of gas consumed over any period regardless as to whether the power is used for heating or for other purposes. These prices for gas and electricity are subject to this modification.

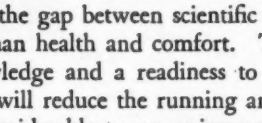
It will be seen that there is little to choose between anthracite and coke in properly designed stoves in the matter of cost, and that coal in a really good modern appliance is not very much dearer. Coal in an old-fashioned fireplace is almost twice as expensive, and coke in an open fire midway between these two. For short period warming gas in a 1935 type open fire is more expensive than electricity at 0.9d. a unit, but for the latest type of gas fire gas is slightly cheaper.

Background heating, for halls and passages may be obtained by the use of flueless gas heaters, and more cheaply by kerosene in suitable radiators, but although quite safe in halls or passages gas does give an odour if no flue is provided, whilst kerosene heaters are troublesome to fill and keep clean—and unless they are kept clean they also cause odours.

It is, of course, impossible to foretell how these fuel prices may vary in the future.

It will be seen then that many of our present practices are uneconomic and inefficient. As a consequence our homes in general are far less comfortable than they might be. The field of housing is therefore another of the many in which the gap between scientific discovery and its application is costly in human health and comfort. The wise application of our considerable knowledge and a readiness to incur a slight increase in capital expenditure will reduce the running and maintenance costs of our homes and add considerably to our enjoyment of them.

I would record my indebtedness to Mr. L. Copeland Watts; to Mr. R. H. Rowse of the Fuel Research Station; also to members of the staff of Messrs. Federated Foundries Ltd., Messrs. Allied Iron Founders Ltd., the British Electrical Development Association, and of the Gas Light and Coke Company for help with technical data and other information.



BIOGRAPHICAL NOTES

THOMAS COCHRANE ANGUS, D.F.C., D.Sc., A.M.I.E.E., A.M.I.H.V.E., F.I.E.S.—City & Guilds Technical College, Finsbury. War service 1914–18 Hon. Artillery Company, R.N.A.S. and R.A.F. Assistant to Sir Leonard Hill, National Institute for Medical Research; Ventilation Engineer to Dunlop Rubber Co.; Sales Engineer Eriths Engineering Co.; Ventilation Engineer Ministry of Supply (1941–1945); Lecturer Applied Physiology, London School of Hygiene & Tropical Medicine. Papers on ultra-violet radiations, ventilation, illumination.

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THE HISTORY OF INFECTIOUS DISEASES IN ENGLAND

By A. H. Gale, D.M., D.P.H., *Medical Officer, Ministry of Health.*

If we look back into English history we find that we can identify many of the infectious diseases which are common now, but that the relative importance of different diseases has varied very much at different times and that some of those which our ancestors had particular cause to fear have now disappeared from this country. Plague, for example, was a recurrent menace from the time of the Black Death in 1348 to the Great Plague of London in 1665–66.

The biology of plague has been worked out relatively recently and it is now known that the plague bacillus is primarily a parasite of rats and that it is only when the epidemic in rats reaches a high intensity that the disease attacks man. The rat flea carries the bacillus from the rat to man. Plague has always been an imported disease but it is not certain why it never gained a firm foothold in England after 1666. The disease did reappear on a small scale in the Eastern Counties about 1906 chiefly in rats but with a few human cases. Although we know a great deal about the immediate mechanism of the spread of plague the factors which cause a pandemic are probably extremely complex being dependent on climatic conditions, the conditions of survivorship of rats and fleas, differences in the distribution of different species of rats and fleas and so on. Plague is in fact a good example of the complexity of causation of epidemics. Although we do not know the whole story, however, we can be sure that plague is never likely to be a menace in countries of Western civilisation unless there is an almost complete breakdown of that civilisation.

If we turn from plague to more familiar diseases and to a rather later stage of history we find that, in spite of fluctuations in the mortality from individual diseases, there has been a remarkable reduction in the total deaths due to infections since the middle of the eighteenth century. For the early part of the period, up to 1837, there are no comprehensive statistics but there is evidence that the great growth of the population of England and Wales—from about six and a half million in 1750 to about eighteen million in 1850—was due rather to decreases in the number of deaths, particularly of young children, than to any spectacular increase in births. Because of the imperfections of the records, it is impossible to say exactly which diseases were on the wane, but it seems likely that smallpox was, and that famine diseases like typhus were also.

In the first half of the nineteenth century two opposing influences were at work. The industrial revolution was bringing a higher standard of

living to more and more people but the great growth of the towns and the primitive state of their sanitation were increasing the danger of epidemics of the diseases particularly associated with polluted water supplies and with overcrowding. It is probably true to say that the London of Hogarth was a much less healthy place than the London of 1850 but it was also a very much smaller place ; and the problems associated with rapid growth were even more serious in the new industrial towns.

The great epidemics of cholera in the nineteenth century were due to polluted water supplies, and, as water supplies improved in the second half of the century, the threat receded. Typhoid fever also began to decline rapidly from about 1870.

The overcrowding in the great towns created particularly favourable conditions for the spread of the common infectious diseases of childhood and, although these had probably been important causes of death in the eighteenth and early nineteenth centuries, they became particularly prominent about the middle of the nineteenth. The history of scarlet fever is particularly interesting as an example of a disease which has changed in type so much that in 1941–45 the death-rate among children under fifteen was only 10 per million living whereas in 1861–70 it was 2,282 per million. We now know that scarlet fever is only one manifestation of man's reaction to infection with an organism known as the Streptococcus pyogenes but why the remarkable decline in its mortality occurred is not known. It was not due to advances in specific methods of treatment and it was probably not due to a decline in incidence.

The history of diphtheria in the last few years is perhaps the best example of the success of specific measures of prevention. The death-rate of children under fifteen had declined slowly from about 1895 to 1920 but from then until 1941 there was no steady decline though there were fluctuations from year to year. Since 1942 a vigorous campaign has been carried on to secure the immunisation of children and the number of deaths has fallen from 2,641 in 1941 to 243 in 1947.

Modern Epidemics

So far only the pleasant side of the picture has been presented but there is one group of diseases—the epidemic diseases of the nervous system—which seems to have been on the increase in civilised countries in the last fifty years. Because of the difficulty of identifying diseases in ancient records, it is always difficult to be sure whether some modern epidemic experience is really new, but it does seem to be true that the great epidemics of poliomyelitis which have occurred in many parts of the world, particularly in Scandinavia and the United States and in this country in 1947, are a new phenomenon. Poliomyelitis is due to a very small virus and the group of virus diseases is difficult to investigate

because a virus is so essentially parasitic that it can grow only in a living cell. Finally a word must be said about influenza which showed in 1918 that it can be the greatest danger of them all. From the epidemiologist's point of view pandemic influenza is still as great a mystery as ever ; but since 1918 the virologist has succeeded in isolating the virus and in growing it in the developing chick embryo.

To attempt a general summing up of the epidemiological situation is not easy, because there are so many differences of behaviour in different diseases. On the whole the credit side of the account substantially exceeds the debit side. There have been enormous reductions in the death-rates of the water-borne infections and of the common infections of children in the last fifty years and the recent discoveries of new drugs and new methods of protection have already borne much fruit and may bear much more. On the debit side we must place the virus diseases of the nervous system but we must remember that even in epidemic times these diseases are rare compared with the great epidemic diseases of the past.

THE HEALTH OF THE SCHOOLCHILD

The Central Council for Health Education has been encouraged to find that teachers are increasingly anxious to fit themselves to take full advantage of the many opportunities for formal and informal health education that occur in their daily work. The Central Council believes that educationists have an outstandingly important contribution to make to health education and has, therefore, included a course for teachers as the third in the series of regional courses in health education that it is providing for groups of natural health educators in university centres throughout the country. Similar courses have already been held for nurses and sanitary inspectors.

Under the general title of Health Education, experts will lecture on physiology, psychology, communicable diseases, social factors affecting health, and the practice of health education in school. This two-day course is being held from 10 a.m. to 4 p.m. in the following centres on the stated dates:

Birmingham, 24th and 25th January
Bristol, 7th and 8th March
Cambridge, 21st and 22nd February
Cardiff, 10th and 11th March
Leeds, 7th and 8th February
Liverpool, 31st January and 1st Feb.
Manchester, 3rd and 4th February
Newcastle, 17th and 18th February
Oxford, 27th and 28th January
Sheffield, 10th and 11th February
London, dates to be announced

No fees will be payable in respect of teachers nominated by directors of education, to whom application should be made.

Hlth. Educ. J., 1949, 7, 22—28

RELIGION AND HEALTH

By Rt. Rev. H. A. Wilson, D.D.,
Bishop of Chelmsford.

The discussion of such a subject as this inevitably invades the territory which belongs to scientists in general and to psychologists and medical men in particular. I make no pretence of any specialist knowledge on any of these subjects nor, indeed, would I make the modest claim to possess exceptional knowledge or experience in the more limited field of what is generally called 'spiritual healing'. But anyone like myself who has had a long and varied pastoral experience, during which he has visited innumerable sick persons, and hundreds of dying people, not to mention the vast number of cases where he has been the recipient of the confidence of people in anxiety, fear or depression, inevitably acquires an inside knowledge of the state of mind of the physically and mentally sick. Such a person sees sickness, bodily and mental, from an angle quite different from that of the medical man and for that reason his experience may have a supplementary value not to be despised by the doctor whose point of view is strictly scientific.

Obviously the approach to any adequate discussion of such a subject as religion and health should begin with some consideration of the nature of man. This is a subject for philosophers and it is a line of country where I cannot walk easily. I propose therefore to state what I believe to be the case and leave it at that.

Man has two feet: one is firmly planted in the material world, the world of time, space and sense experience and the other is lightly in contact with the world of spirit. His rightful destiny is that throughout life he should shift his weight from one foot to the other until he at last uses the material world for the final kick-off into the spiritual world. Though he is possessed of a body and a mind, he possesses also a spirit. His body is the foot with which he makes firm contact with the material world; his spirit is the foot with which he uncertainly touches the spiritual world: his mind plays the *rôle* of the circus performer who rides two horses simultaneously. His sense impressions of sight, touch, hearing and feeling give him an assurance of the reality of things physical and material, but he needs constantly to remember that 'reality' is largely a delusion. The abiding and everlasting things are the spiritual, difficult though it is for all, and intensely difficult for many, to accept it. Sir Thomas Browne, has put it in his usual charming fashion: "There is something in us that can be without us and will be after us, though indeed it hath no history what it was before us and cannot tell how it entered into us".

I am not going to attempt anything like a complete essay on my sub-

ject, I prefer to select three or four points which seem to me to be of most importance and of greatest general interest. But before proceeding to these let me make quite clear what my own personal opinion is regarding the general question of ' spiritual healing '. All knowledge and all truth come from God and it is therefore right that we should avail ourselves of all remedial and curative processes which have been discovered by scientists, psychologists and medical men. Whether or not people are ever cured of diseases by ' simple faith ' alone does not affect the case. Prayer and quiet trust in the love and wisdom of God may carry the sick man all the way back to health. But nevertheless the neglect of knowledge which God has revealed and the claim sometimes made that such neglect is God-honouring, seem to me not only unwise but definitely what is called in the Bible " tempting God ".

What is Health ?

Let us first of all make some enquiry as to what we mean by healthiness. In an out of the way place in the New Testament occurs a short letter which St. John wrote to a friend of whom we know nothing except his name. It begins as follows :—

> " Beloved, I wish above all things that you may prosper and be in good health, even as your soul prospers ".

It is pretty clear that St. John thought of good health as something much bigger than the freedom of the body from all functional and organic disorders. We should all agree with that : for it is a commonplace with us that mind and body interact in an astonishingly intimate way. We know that physical maladies are often caused by mental or nervous troubles. Hysterical paralysis and some skin diseases have their root in the nervous system. Indigestion is commonly caused by worry. In all such cases healing must be effected in the mind and the physical irregularity will disappear as a result.

But since this is so, may it not well be that a disordered spirit (or soul if you like so to call it) is sometimes the cause of both mental and physical disorders and that, therefore, since the root of the trouble lies there, the healing must take place there ? I came across a case which bears this out. A man of deeply religious convictions ' lost his faith '. His sorrow and distress were so great that he sought the advice of a sympathetic doctor. The doctor prescribed a very simple adjustment of diet which included as one item a large cup of tea on waking in the morning. In a week or two the lost faith returned and the patient, no longer a sufferer, humorously ascribed the recovery of his religion to a cup of tea before breakfast.

The wholeness of the individual is now generally recognised. No instructed person thinks of himself as a trinity of body, soul and spirit,

each insulated from the other. But I am not at all sure that we carry this recognition of the wholeness and the intimate interaction of these three sides of our nature to its logical end. We are prepared to speak confidently of the influence of mind over matter, though in fact we know precious little about it ! But are we equally willing to admit the influence of spirit over mind and matter ?

I say this because as a Christian minister I am pretty confident that a sound diagnosis of many nervous and even mental disorders would prescribe not an extra round of golf or a week-end at the sea, but the regular saying of prayer and the use of Church worship and sacraments.

We all know the oft-quoted words of Sir Oliver Lodge, that the modern man is not worrying about his sins. Isn't he, poor devil ! He is worrying horribly about them, only they are to-day called depression, or repression or inhibitions or complexes. But they are there right enough. An eminent dramatic critic recently wrote: " Lady Macbeth would now-a-days be ordered to Marienbad ". I daresay she would if she were unlucky enough to take the advice of a physician who did not believe that the spirit has a lot to contribute, either for good or ill, to the state of mind and body. But she would return from Marienbad a good deal worse than when she started on the journey. Possibly she would not return at all as she might have thrown herself out of the hotel window.

Health and Man's Spiritual Life

I quote some words of a well-known neurologist: " 'There is a spiritual nature in man which must be satisfied if he is to be healthy and to attain this calls for the best that science and religion can give ". I am of the opinion that this spiritual nature is the really critical spot in all of us: that it is the control centre for the whole of our being. If things are wrong there symptoms of the disorder will be seen in the physical and mental parts of us: if things are right there, though physical and nervous troubles may appear, the equipoise, calm and confidence which are the products of an active and healthy spiritual life will have most beneficial effects in producing the right attitude towards ill-health. I shall return to this point later on, but at the moment I wish to say something as to whether direct action in the spirit of man can and does produce healing of disease in mind or body.

It is not possible for anyone to speak decisively on this subject. The evidence for the affirmative opinion is at any rate very bulky, and widespread and long-standing. The temples of Aesculapius in ancient times were usually decorated with imitation arms and legs, eyes and ears, which sufferers from diseases in those parts of the body had offered in thanksgiving for healing as a result of prayer to the gods. The immense claims of Christian Science, the hundreds of miracles performed at Lourdes are

modern examples. Indeed probably every religion could advance similar claims: and of course at the head of the list stands the New Testament evidence.

For my part I am content to keep an open mind with a definite inclination towards belief that cures as a direct response to prayer have occurred and do occur. It is I think purely and simply a matter of evidence, for if one really believes in a Personal God who loves His children and watches over their lives there is obviously no *a priori* reason why such direct intervention should not occur. Nor am I affected by the argument that even heathen religions have made claims similar to those in the New Testament for I find it impossible to believe that the Father of us all requires correct theological belief as a condition of helping one of His children who prays for His help.

Dr. W. R. Inge once characteristically suggested an experiment in which prayer should be made for all the patients in a hospital ward and a comparison made with another ward for which no prayer was made. He cynically suggested that the result would be the same. I am not so sure but I certainly would insist on having my bed in the former ward and I am inclined to think I should find Dr. Inge there also if he and I were sufferers simultaneously.

I have certainly had experience of two cases in which definite prayer for recovery was offered and complete healing most unexpectedly resulted in a remarkably short time. But the evidence is not good: for coincidence, false diagnosis, spontaneous cure would all have to be ruled out as possible explanations of the recovery and that would be a practical impossibility.

The Effect of Prayer

Now let me return to an important point to which I referred a while ago. I am on very sure ground here for what I am about to say rests on frequent experience. There may be a good deal of uncertainty as to whether prayer does directly heal physical disorders but there is no doubt whatever that prayer rightly used does produce that mental attitude towards sickness which is a powerful aid to recovery.

When we fall ill the natural and instinctive reaction is resentment, self-pity, depression and perhaps fear. The extreme illustration of this is the fretful and querulous patient, always wanting attention and finding fault with everything and everybody. He has shrunk into himself and is out of touch with everything which does not concern himself. All this is perfectly natural and must in common fairness be recognised as such. But those mental reactions are the worst thing possible for the sick person. If they can be conquered not only will the sick person be helping his own recovery but very often the sick room will be transformed into

a place of peace and hopefulness. It is here that the entrance of power and illumination can work wonders. To react to disease with resentment and self-pity is fatal, probably in the complete sense of the word. To accept it, to kiss the Cross, is to disarm it, to take the sting out of it, and probably to defeat it. By the way in which we face the enemy we either lose or win.

" Those who meet pain," wrote B. H. Streeter, " clear-eyed and with a positive and active acceptance, who ' face the music ', as the slang phrase has it ; those who are ready not only to ' do their bit ' in a world war, but to ' bear their bit ' in the world's sorrow make a strange discovery. They find that they are not only enabled to bear their sorrow in a way which hurts less—for what hurts most in the bearing is that which is most resented, what is most freely accepted hurts least—but that they achieve an enrichment and a growth of personality which makes them centres of influence and light in manifold and unsuspected ways ".

Few may be able to do all this completely and fully but all can try along that line of thinking. It is contrary to our natural reactions as we have noted, but man can rise above the hampering restrictions of the natural if he has the will to do so. The way is, of course, contact with the super-natural, the only method which enables a man to rise above the limitations of his natural reactions.

Writing on quite another subject, a well-known psychologist says :— " If adequate evidence should be obtained that the mind may be in touch with some well of power outside the material plane then the most fascinating speculations on human behaviour and purpose will arise ".

This is, of course, precisely what the Christian believes to be the case. It is possible, it is the will of God, that we should touch this well of power which lifts us out of ourselves, gives courage and hope and a release from fear and anxiety. If our religion can give us this in our hours of supreme need it will supply us with precisely that attitude of mind which even the most irreligious and material-minded doctor would regard as his greatest ally in his fight against disease.

Faith Dispels Fear

So far I have dwelt too much upon religion and ill-health. This is perhaps excusable for ill-health bulks very large in our thinking and behaviour, probably because we are so much afraid of it. The reason certainly is not because ill-health forms such a large part of our personal experience. It does not. The marvel of our persistent good health is far too little dwelt upon. With few exceptions we are amazingly, incredibly healthy and the prominence of sickness and disease in our thinking and habits is due to our fear of them, their blighting and terrifying effect on us or on those we love when they do come.

Now it is a well-known psychological fact that so long as we are afraid of a thing, that thing has power over us, whether our fear is reasonable or unreasonable: indeed the latter is far the most mischievous for it creates complexes in our subconscious selves which may have the most disastrous results. If we can learn not to fear we are more than halfway to victory. The familiar prayer in which we ask that we may be "defended from the *fear* of our enemies" is up-to-date in its psychology. An enemy is nothing so long as we do not fear it but a nothing so long as we do fear it is a formidable foe.

The remedy for all this is known to us all. If only we could acquire the well-balanced mind, the mental stability, the tranquility of spirit, the calm common-sense and such like qualities, we should pass our time in undisturbed serenity whatever befell us. We all know that this is true but the trouble is that these qualities are so often out of our reach. Here is the clue which points the way to victory.

"Be anxious for nothing but in everything, by prayer and supplication with thanksgiving, let your requests be made known unto God and the peace of God which passeth all understanding shall guard your hearts and minds through Jesus Christ our Lord."

As a nation we have largely lost our religion: and at the same time unhappiness is wide-spread. I think that these two facts are intimately connected. We have lost hold of the old simplicities which taught us to believe in a Heavenly Father who knew us all by name and who numbered the hairs of our heads: in whose sight we were infinitely and everlastingly precious: whose never failing love and care was watching over us every moment of day and night. We have become much too wise to believe this: much too busy and pre-occupied with interests of all kinds to have room for such thoughts and as a result the devils of fear, anxiety, irritation, apprehension and other abominations are in control.

Prof. Esther Lloyd-Jones, head of the 'Guidance Laboratory' at Columbia University Teachers' College has recently said:

> "Thirty million Americans need mental hygiene. Five million suffer from psycho-neurosis, two and a half million have character and behaviour disorders, one and a half million are mentally defective, and half a million are epileptics. In addition there are 20 to 30 million persons with border-line or transient emotional disturbances."

A pretty melancholy record! We may hope that things are not so bad in this country but they are undoubtedly none too good. I set against Prof. Esther Lloyd-Jones' gloomy report some words from Dr. Hyslop who a generation ago was the chief medical consultant at the Bethlem Hospital for nervous diseases:

"The best medicine which my practice has discovered is prayer.

The exercise of prayer, in those who habitually practice it, must be regarded by us doctors as the most adequate and normal of all the pacifiers of the mind and calmers of the nerves ".

The trouble with crowds of people who suffer in varying degrees from nervous disorders may be stated in two ways, which mean in the result the same thing. A part of their being is not functioning in a normal way. They are like a motor-car which is not sparking on one plug. While they are on the level they can take the strain at least for a time but when a steep moment comes in life they can't take it and something cracks.

Or you may put it this way. Religion is good for us. The normal and healthy person needs the relief, the release, the climatic change which faith alone can give.

Relation of Health to Happiness

What precisely is happiness ? It is of course a permanent state of mind to be carefully distinguished from those occasional experiences which we call pleasure : or those moments of excited emotions which provoke fun, amusement and laughter. Is happiness a disposition which we either have or do not have ? Or can we discipline ourselves into such a state of living ?

What precisely is the relation between happiness and health ? I have so often found happiness in the lives of confirmed invalids and great sufferers that I do not think health is essential to happiness. But on the other hand I think happiness is to a large degree a prophylactic against ill-health. Put quite bluntly this would mean that diphtheria germs or hardened arteries e.g., did not find the bodies of calm, well-controlled, peaceful and strong-nerved people a congenial soil. That is probably true, at least in some measure.

Clearly on every ground, happiness is then the greatest good. How can we get it ? That is a big question but I have given the clue. To get out of ourselves : to find an anchorage for our souls somewhere outside of and beyond ourselves : in an area not subject to the changes and chances of life. That anchorage is found only in God.

BIOGRAPHICAL NOTE

FLORENCE BENELL, A.B., M.S.P.H.—Fellow, American School Health Association. Director, Health Education Workshop, Extension Services, University of Illinois, August 1948 ; Health Co-ordinator and Assistant Professor, Eastern Illinois State College, Charleston, Illinois, 1947–48 ; Director, Health Education Tuberculosis Institute of Chicago and Cook County, 1944–47. Taught hygiene and physiology 1937–47. Author of *Community Forum and Exhibition on Tuberculosis, Health Education Illustrated*. Contributed to Health and Education Journals, 1937–48.

Hlth. Educ. J., 1949, 7, 29—32

AUDIO-VISUAL AIDS IN HEALTH EDUCATION

By Florence Benell, A.B., M.S.P.H.,
Editorial Assistant "Hospitals", American Hospital Association.

Of course the discovery of movies is an old story now. Everyone has taken it for granted, almost. But without movies we should have not been able to motivate people so dramatically to good health.

Education films have gone through many stages of development. To-day with the advent of colour and technically improved animation we have a superb combination. This has been especially true in the new health films produced in the last few years.

What makes films so useful in health education? Why not merely give talks? One only has to go to any movie theatre and see the crowds that are continuously in attendance to be reassured of the popularity of the movie film with young and old alike. Telling a story through pictures lessens the chance of verbalism that may occur through reading or speech-making. Learning something through pictorial motion is psychologically a pleasant sensation to many of us. There are, of course, a few people who are not visual minded and do not enjoy films, but such people are in the minority.

Demonstration through illustration clarifies any point better than other techniques. The film is merely one way that makes use of this fact. But, to be most effective, the educational film should not replace discussion of a subject in health, rather it should be supplemental.

Let us illustrate an example of the proper use of the health film. The group is an adult club wishing to learn what and how to tell their adolescent sons and daughters about menstruation. The leader of the group asks the members to jot down the questions they would like answered. Some of these questions can be clarified through the showing of a film on "The Story of Menstruation." The leader outlines the questions on a blackboard and holds some discussion with the group to make clear to all what they should look for in the film. He has previewed the film and is familiar with the content. After the preliminary discussion and with definite objectives in mind, the group is shown the film, which is an animated movie in colour.

No amount of talking or reading could have so clearly and so effectively told the story of menstruation to this group as did this film. The film is shown again after more discussion. Re-emphasis is sometimes needed and since most educational films take only 10 to 15 minutes a reshowing is often profitable to the learning process.

This technique of using the health film is advantageous not only to adult groups, but also the classroom situation.

Advertising Health

To-day, we have many ways of attracting the public toward the purchase of some nostrum. Why not employ the same appeal for good health, for preventive measures? In the latter case we have the more difficult and long range task. For we must grant it is far easier to interest Tom Jones in some cure when he has aches and pains. But to interest this same Tom Jones in the prevention of these same aches and pains, is a challenge to health education.

To meet this challenge we must make use of the same techniques that are used to advertise the nostrums. We must be dramatic, use clear and simple language, colour, motion when feasible, and illustration. All this we can accomplish through modern audio-visual aids. Modern aids are simple ; simple things can be effective.

What are some aids effective to health education in addition to the film? Audio-visual aids offer vicariously those experiences which are not possible directly. Vicariously, we can show the way the heart beats, the technique of an appendectomy, the workings of vitamins on the body. In the United States there are several museums that offer the public opportunities in this vein. Some of these museums are exclusively health museums, one such being the famous Cleveland Health Museum. Others have as one part of their museum a large section devoted to health and medicine ; one such is the Museum of Science and Industry in Chicago.

These museums offer health exhibits that are based on the principles of education and publicity. The exhibits are modern in design and make use of eye-catching colour schemes. Some exhibits offer opportunities for the public to participate through push-buttons, levers, cranks, view boxes, and quizzes. Guides are on hand to answer questions in addition to special guided tours for educational purposes.

Just watching the great number of people going through these museums is sufficient proof of the interest aroused. Because this is true, any institute, conference, or group interested in health education should prepare a temporary or permanent health exhibit. School children of all ages find the preparation of such an exhibit as fascinating as a carnival. And what is better than learning by doing ? Those who prepare the exhibit definitely gain education. Not all the materials for a health exhibit need be made ; some may be procured from health agencies, private and commercial. The average person is interested in what can be associated directly with the human body and how his own body may be affected. Exhibits that are geared to this view can best sell health to the general public. But always remember the medium used must be up-to-date.

Since plastics signify to many the modern touch, use plastics in the preparation of the models. The ' new look ' is true of exhibits as well as women's clothes. The keynote of any visual aid should be to keep up with the times and interests of the group.

One group of school children was interested in the brand new water filtration plant built in their city. Their teacher arranged for them to have a guided tour through the plant. After this they were given a test to discover what they had learned. Somehow the results were not as good as expected. The teacher decided to have the class prepare a model of this filtration plant. After this was done, another test was given ; this time the results were gratifying. This illustration is merely cited to bring out the importance of active participation by the learner. Also to bring out that although tours are available, they are not sufficient unto themselves. Actually, any type of audio-visual aid is not the whole answer to an educational problem, it is the combination of various types that assures the implementation we seek to the health lesson.

Any health programme is most effective if we remember that health problems are not confined to one group or one person, and therefore are best tackled through the co-operation and co-ordination of the many agencies and peoples concerned. In the community-wide approach we are especially aware that there are many people who talk about health, read about health, know about health, but do nothing about health. How can we reach these people?

Motivation techniques are integrated with techniques of advertising, public relations, community relationships, and education principles. How can we tackle a community-wide health advertising programme?

The Community Approach

Let us assume we want to find out how many children eat adequate breakfasts and lunches in Community X. How sound is the nutrition status of the children in this community? In appearance most children seem healthy. But we know some children fail to eat properly, and adequate nutrition is important to a child's health. This is our problem in Community X. We organise a community health council and together it is decided to discover the adequacy of the children's breakfasts and lunches in this community. Our problem is to sell adequate breakfasts and school lunches to the entire community. The community health council formulates objectives for a programme of publicity and education. The following things are decided upon: (1) posters illustrating the seven basic food groups are to be posted all over the community, (2) flyers advertising a forum-discussion on nutrition are distributed to all community groups, (3) special ballyhoo skits are put on, (4) banners are strung in the street, (5) cartoon advertising

is put in the local newspapers. Every device possible is used to provocate the community to co-operate with the programme.

The forum-discussion is not to be the usual type of merely a speaker or speaker with film. The programme is to open with a community song, a short Technicolor film on nutrition, a sound filmstrip of an ideal school-lunch programme, a baritone soloist, and an open discussion on children's nutrition. This type of a programme makes use of many kinds of audio-visual aids, and the variety stimulates interest of the audience. In addition to the activities already mentioned mimeographed basic patterns of the adequate breakfast could be distributed to the group.

The schools are also called in to co-operate by having school-lunch programmes, nutrition experiments in the classrooms, and nutrition surveys carried out by student committees. The results of these can be graphically illustrated. In what better way can the students, teachers, and parents observe the effects of nutrition education?

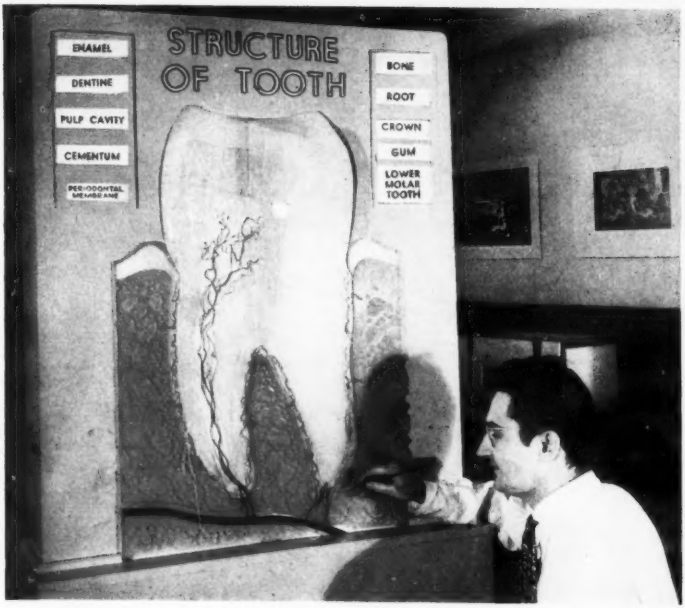
Other ways of educating the general public of the community about nutrition are film trailers to be shown in commercial movie theatres, weekly articles in the newspapers, talks before all organised groups, exhibits in large store windows, libraries, and church lobbies.

Through the community-wide approach audio-visual aids in health education take on a new importance. They are used much in the same way as an advertiser uses ads for his campaign. Audio-visual aids in health education should be meaningful, purposeful, and worthwhile. Audio-visual aids should stimulate people to acquire facts, attitudes, practices in the modern concepts of health education.

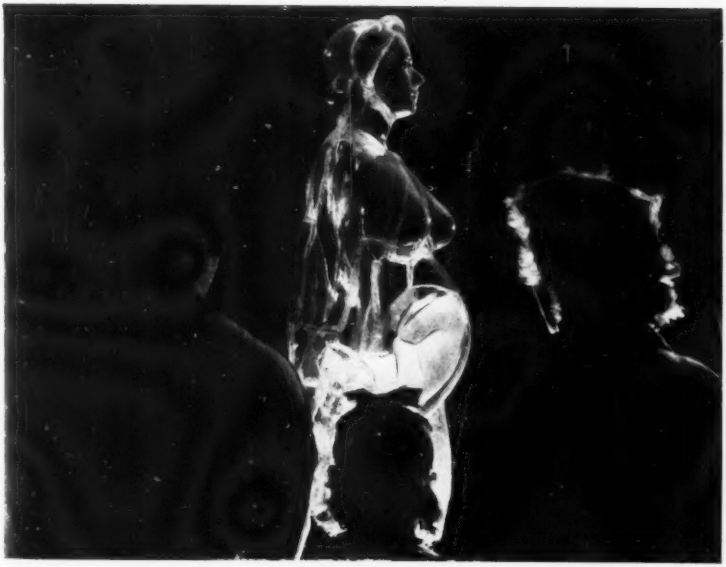
A Valuable Medium

With audio-visual aids a health educator is certainly in a much better position to advise people in the problems of health than he is without them. They provide a pictorial view for understanding health facts. Health is something with us all the time, at all ages, in all groups ; therefore, audio-visual aids should be geared to type and time. Variety and ingenuity plus showmanship cannot be divorced from health advertising. Health advertising depends upon the modern approach to audio-visual aids. Audio-visual aids are valuable instruments for health education.

No one need be baffled by the varieties of audio-visual aids. He must choose a few and begin somewhere. Always remember, better aids attract better results. Somehow we must strive for the construction of the best audio-visual aids in health education. Much in use to-day is excellent, but some must be improved. We must strive toward keeping our health aids in consonance with the expanding personal and community health needs and problems.



An exhibit at the Cleveland Health Museum, Ohio.



An exhibit at the Museum of Science and Industry, Chicago.

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A manuscript of Roger of Salerno. A physician and his assistants in the Pharmacy. 13th Century French Manuscript in Trinity College, Cambridge.

Hlth. Educ. J., 1949, 7, 33—34

MILESTONES IN MEDICINE
5. THE SCHOOL OF SALERNO

By E. Ashworth Underwood, M.A., B.Sc., M.D., D.P.H., F.L.S., *Director, The Wellcome Historical Medical Museum; Hon. Lecturer, University of London.*

If the average educated person was asked what he knows of the School of Salerno, he might suddenly remember some connection between Dame Trot of the pantomime and Trotula, the experienced physician of the Salernian period; or a vision of the three doctors recommended in the Salernian poem—Drs. Merryman, Quiet and Diet—might be conjured up. Yet the School of Salerno was in some ways a unique human institution.

Some time in the ninth century a group of physicians who were not connected with the Church began to form in this beautiful town on the bay of Paestum. For over two hundred years the fame of this community of teachers increased, until, during the whole of the 12th and 13th centuries, it was at its peak. Quite early in its growth the 'College' consisted of ten physicians who were known as the "Masters" (*Magistri*). To study under these men and their successors students of all religions and nationalities came from far and wide. There was a real understanding between students and teachers, and the teaching was at the bedside of the patient, and not only out of books. Women were admitted as students. In the 11th century Trotula was an important figure. Though there is a possibility that she is purely legendary, the probability is that she was either a physician or a midwife.

During the 12th and 13th centuries, when the School was at its best, much of the literature which has come down to us was written. The famous *Regimen sanitatis*—the laws of health—was composed in Latin and added to extensively during this period. Those who can recall a few tags from the English version of this poem may be surprised to know that one form of it contains over 3,500 verses. The poem was committed to memory by students and physicians, and its precepts were used in their daily practice. It is the most famous of all mnemonics. In the great period certain writers of note emerged. Constantine the African was a prolific translator from the Arabic, and he did much to resuscitate the knowledge of Greek medicine which had been preserved in Arabic translations. Roger of Salerno wrote in this period the first important work on surgery in Italian. In 1240 the Emperor Frederick II gave Salerno

the sole right of licensing physicians, and the course at that time lasted five years.

The rise of the universities in the 14th century sapped the prestige of Salerno. Paralysed in its limbs, it lived on as a mere name for four hundred more years, until Napoleon finally suppressed it in 1811. In its day it had deserved well of all practitioners of the healing art, for it had revived and kept alive the flame of Hippocratic medicine, and had practised a form of clinical instruction which was the forerunner of our modern methods.

THE LING PHYSICAL EDUCATION ASSOCIATION

President, Miss M. T. Crabbe

(*Principal*, I. M. Marsh, College of Physical Education, Liverpool)

The L.P.E.A. was founded in 1899 as a focal point for members of the specialist Colleges of Physical Education. For admission to membership, the Association recognises eight women's colleges and two men's colleges in England and one women's and one men's college in Scotland. The aim of the L.P.E.A. is to promote a high standard of physical education throughout the country. Membership (3,800 in 1948) is limited to fully qualified teachers.

The Association is administered through its 15 Area Organisation Representatives, covering Great Britain and N. Ireland. It has 26 affiliated societies, whom it assists with courses and for whom it holds a conference each year. The Association is also represented on a number of other bodies concerned with child and youth welfare, medicine and physiotherapy, health education etc.

Throughout the year, the L.P.E.A. conducts holiday and one-day courses. It also holds conferences on various aspects of physical education (gymnastics, dancing, games, athletics, swimming, remedial gymnastics and health education) at which specialists lecture, demonstrate or lead discussions. Tours of elite foreign teams are sponsored for the purpose of study and comparison. The Association is to co-ordinate all matters concerning arrangements for the British contingent at the 1949 Lingiad.

In addition the L.P.E.A., as a member of the Publishers' Association, publishes educational books and music and conducts a book department where books on all aspects of physical education may be purchased by members and the general public. In conjunction with the Royal Academy of Dancing, it is sponsoring the first series ever compiled of authentic handbooks on European National Dances, published by Max Parrish Ltd.

Headquarters: Hamilton House, Bidborough Street, W.C.1 (Tel. EUSton 1086/1433).

The fourth in a series of notes on major voluntary organisations that undertake health education work.

Hlth. Educ. J., [1949, 7, 35—39

MENTAL HEALTH AND GROUP RELATIONS AT WORK

By JOHN D. SUTHERLAND, M.B., Ph.D., D.P.M., *Medical Director of the Tavistock Clinic.*

IT would seem rather unambitious to claim that one of the great contributions of modern medical psychology to mental health was the revelation of our constant need throughout life for satisfying relations with others. Nevertheless, we do not shrug our shoulders when a comparable claim is, for instance, put forward that one of the great findings of general medicine has been our constant need for adequate diet. We think of the very great advances in our knowledge of what constitutes an adequate diet, and of the serious effects produced by dietetic deficiencies. The time has come, however, when the 'psychological deficiency diseases'—those deleterious effects on our well-being caused by a psychological environment that is inadequate to meet our emotional needs—must be given equal prominence.

It is true that while our knowledge of the psychological needs of man is not so far advanced as is our knowledge of his physical needs, enough is nevertheless known to enable us to start taking action. It is difficult to specify what constitutes satisfactory human relations but we know that they involve a respect for the individuality or uniqueness of everyone, and that they imply certain convictions about others—chiefly that the impulses to co-operate and to live in a constant 'give and take' with others are inherent in all. Good relations are in fact sought by all, and when they are not experienced, tensions and frustrations accumulate: from an early age, we need to belong to groups that accept us and whose members we accept.

All of us are quick to recognise the profoundly disturbing situation that is created when, as one of a group, we are forced to endure a situation in which we are not treated as mature; or one in which we are obliged to treat others as immature. We have only to think of the effects of the influence of someone who must always dominate, or who is so suspicious of his status being questioned that he cannot really take part in a common purpose. Almost as bad is the kind of relationship made by the excessively dependent person who wants to lean on us all the time. The disastrous consequences of bad relations between parent and child are so obvious in the personalities of the children, both in childhood and

in later years, that we are now trying to secure for children an increasingly high standard of parental care. We are beginning to be concerned about the development of the adult whose childhood was spent in institutions where there was insufficient warm contact with good mother and father figures. In short, it is not only for the growing personality that a good 'psychological metabolism' is needed; all of us throughout our lives need a satisfying interchange with others.

The Special Importance of Working Groups

Human relationships at work are amongst the most prolonged that we experience. Half of our waking lives is spent in our working groups, yet how many of us can say that in these groups we feel that we are treated as mature individuals who are capable of responsible actions; that as a result of our experiences in these groups we are nourished spiritually or intellectually? The raising of this kind of question often gives the impression that we have left the field of preventive medicine for politics—for things that are not the concern of any health worker. This reaction is, of course, part of the way in which we have been conditioned. Actually, it is only too easy to see that those responsible for our health must take into account the effects of working groups on the welfare of their members. For example, in the Services during the war it was often shown that minor sickness increased or decreased according to the morale of the unit. This can be seen in industrial groups today. How has it come about that we have been so blind to this result of our industrialisation on the welfare of the individual? The answer is in large part that the growth of industry was accompanied by an economic philosophy about man which did scant justice to his emotional needs. Man was regarded as a discrete unit, the 'economic man', who responded with varying degrees of effort to the monetary rewards held out to him. Nothing could be more misleading about his real nature. Man is not a free floating particle in the sea of society, who enjoys drifting around following the erratic lure of economic rewards. He grows roots in his social environment; and it is the groups to which he belongs, at home, in work and in play, that feed his spirit. Like any living thing, he cannot easily uproot himself without risking serious consequences.

Looked at in another way, man has been trained to give his best to work in return for the means of keeping himself and his family alive, but no one has been asking what was the effect on his mind of that great fraction of his waking life—his day at work. What were the effects on him as a person of the monotonous hours in which he was doing work under conditions about which he had little say? His working group had to perform a task which appeared to him to be dictated by an

arbitrary section of the community, and which was done in places and at times over which he had little control. It was little wonder that he banded with his fellows against this tyranny. But the tragic result of this was that in place of the profound satisfaction of working *with* others in the common ' give and take ' of creation, or production, as we have come to call it, his chief group relations in work were concerned with expressing his resentments and frustrations *against* others whom he held responsible for his emotionally starving condition.

Any frustration tends to spread and to affect other sections of our lives, leading to the familiar process of ' taking it out of the dog '. Impotence and frustration in a human relationship gnaw at our peace of mind and lead to aggressive behaviour towards some weaker person. Hence, the effects of work on our personalities have certainly been to increase the emotional tension at home and to make us more prone to follow distracting and uncreative activities in our leisure.

These consequences of poor psychological conditions at work are no longer mere matters of speculation. Careful experimental comparisons of working groups under different conditions show that with full participation, i.e., where all the members have a real say in what is to be done and how it shall be done, people not only work better in the sense that they have a greater output with lower wastage rates (less ' protest ' about irksome conditions), but they are happier in their work. They are less prone to quarrelling and irritability ; they are more constructive in ideas and they are much more self-reliant ; they do not give up effort when the boss goes because they do not feel they are working under the pressure of such negative motives. They are working because they feel that they are giving to their fellows, and this creative stimulus spreads to other activities so that, for example, there is more participation in the group life apart from work ; more toleration and more readiness to help others. Authoritarian group atmospheres led by the man whom we have learned to consider the efficient organiser, who lays down what we shall do and how we shall do it, are associated with a great deal of bickering, scape-goating and general tension which seeks discharge outside the place of work. Unfortunately we have got so used to this that we seldom notice it ; but if for instance we watch a meeting dispersing after it has been conducted by an authoritarian chairman we can get some idea of the pent up tension from the excitement in the little groups as they stamp angrily away. Then think of this going on for hours every day. Or again, contrast the professional man with the factory or office worker. It cannot be that all the virtuous attitudes of the professional man are due to his nature. Is it not that he is in love with his work and life because he has so much chance of expressing himself in his work, and because of its stimulating effect upon him?

What Can We Do?

Unlike physical disease, preventive measures in the field of mental health cannot be 'laid on' as we can ensure clean water and pure food. These measures can only come through the difficult process of changing our attitudes to many things. All of those responsible for groups at work, at home, at school, in clubs or in recreational fields must try to make their leadership as democratic as possible. They must evoke full response from the members of the group by seeing that they are given full opportunity for their talents and for taking a share of the responsibility. This is not going to be easy. A particular difficulty arises from the fact that because there has been so much authoritarianism in certain sections of our lives, we have developed various protective devices against it, one of which is suspicion of new ideas from the 'bosses'. Executives will require a great deal of insight and tolerance in fostering participant relations in their working groups because any insincerity will be actively sought and tested out. Nevertheless, the impulse to co-operate is very strong, and so is the capacity to take responsibility if the right opportunities are given. Health workers of all kinds can play a particularly important *rôle* in securing better group relations because the health services in our country have maintained a high level of integrity. The professional status of medicine and its allied groups of professional workers has made these groups readily acceptable as objective interpreters of human difficulties. Where such workers are involved directly in 'industrial welfare', their interest in the morale of the working groups must become as great as in the physical factors. The present training of these workers does not always equip them for this highly complex task of appreciating and dealing with tensions that occur within and between groups, and this deficiency will have to be made good. The most salutary lesson, as in all psychological matters, is to look at ourselves. Are we encouraging responsible participant action in those with whom we work? If a decision is to be made which affects others, have we really got those others planning with us so that the best decision is reached? If we start to do that and then think constructively about the difficulties that we meet, our education in this important field will be launched on the right lines.

BIOGRAPHICAL NOTE

JOHN D. SUTHERLAND, M.B., Ph.D., D.P.M.—Medical Director of the Tavistock Clinic, one of the first clinics in this country for out-patient psychological treatment. During the war was Senior Psychiatrist to the War Office Selection Boards which developed interesting new ways of ensuring that candidates for commissions got a fair chance of showing their mettle. After the war became Chairman of the Management Committee of the new Tavistock Institute of Human Relations, a body set up to study how better human relations can be secured.

Hlth. Educ. J., 1949, 7, 39—42

HEALTH EDUCATION BY FILM IN AFRICA.

By George Pearson (Hon.), F.R.P.S.,
Senior Film Director, Colonial Film Unit.

In the wise development of our vast Colonial territories the greatest undertaking is the mass education of the illiterate millions who form by far the larger proportion of the population. The long-term aim is the cultural uplift that achieves a higher standard of living, ends illiteracy, and leads eventually to self-government.

This is a matter of many years, probably generations, but while the purpose is steadily pursued, methods must be used for the speedy dissemination of urgently needed information ; these available immediate methods are the spoken word, the radio, the practical demonstration, the model, the diagram, the still picture, the film strip, and the living scene of the moving picture.

The Colonial Film Unit concentrates on the use of the cinema screen as a pre-eminently potent means of instant value for bringing to primitive audiences new ideas within their comprehension, especially those that affect their welfare. The films are taken to remote primitive villages by cinema vans and shown to audiences of hundreds, and even thousands. In all plans for progress the physical well-being of the native is paramount, and health education is definitely the first directive of the Film Unit ; to bring to the native mind realisation of the benefits of better homes, cleaner villages, wiser sanitation and healthier bodies, is the noblest purpose in our film programme.

In the African bush the struggle for life is intense ; expectation of life is grievously low, and only by placing better health in the van of the progressive march can the desired cultural goal be reached or even approached. Local custom, apathy, prejudice, and even in some cases active opposition have all to be overcome.

To say to those whom we wish to benefit " Don't do this or that " is no way to urge them ; it is through clear understanding only that they can be stimulated to comprehension of our picture messages, and that demands on our part a deep appreciation of the native mind. We are dealing with adults, who though unenlightened are not necessarily unintelligent ; on the contrary they are often very shrewd and always keenly observant, but they are adults who cannot read or write, primitive in customs and environment, heirs of an age-long savage tradition of fearsome folk-lore, fetish and strange superstition that we cannot ignore.

They have characters and opinions resulting from what has been impressed upon them by their predecessors and the circumstances of their environment. Only on the accumulated memory store of those strange adult minds can we build towards our purpose, the bringing to them of a fuller understanding of the world, of life, of living.

Arousing Primitive Interest

So we shape our films in accordance with the established laws of all mental progression ; in essence that all acquired knowledge must derive from experienced sensations, of which those of the eye are ever the strongest. Those experienced sensations are held in the memory as thought material, and as fresh sensations are added to the store, new mental comparisons and associations are conceived ; from perception to conception, that is from apprehension to comprehension.

The native who will see our film has a mind compact of memories, interests, and expectations. Our picture message enters that memory store and stirs a new consciousness which is a fusion of the old with the new. If what we have provided has no point of contact with anything previously experienced we shall have failed, but if we have given that mind something that though unfamiliar has stirred some memory cell, interest will be captured, imagination aroused, and awakening of understanding born.

It is this acceptance and appreciation of the stored material in the native mind that rigidly affects our choice of the new material we desire to supply ; for whatever our culture or race may be, all present thinking depends on past experience. We can only start from those things of which our audiences have clear perceptions if we are to succeed in leading them to comprehension of associated ideas. An example may make this plain.

On one occasion a film on malaria and the mosquito was shown to an utterly primitive audience. After a while a greatly enlarged picture of the ugly insect was projected on the screen, presumably to give more intimate knowledge of its structure. The reaction amongst the natives was ruinous to the film purpose, for they said there would be no need for them to worry about the little mosquitoes they knew ; those in the film were enormous and terrible things quite different from anything in their country ! What had been overlooked was the complete ignorance of the primitive mind about magnification. By this lapse the film makers utterly failed to make their point and unfortunately added a false idea to the native memory store.

Walt Disney has recently made a cartoon film for South American primitives in which he has dealt ingeniously with this problem of the explanation of magnification.

One other psychological factor affects our methods. We have to arouse in the native mind the will *to do,* to put into practice what the screen has revealed as beneficial, and this vital will can only derive from stirred emotions. The prime movers towards human action are always emotional, therefore we endeavour to stir our audiences emotionally by threading the picture lesson through a simple story of native life with native characters on native soil. Many of our films have been profitably tied to the parable of Mr. Wise and Mr. Foolish. It is a good way to carry a health lesson agreeably and provocatively.

Endless Subject Matter

Of suitable health subjects there is no end ; many are given priority to meet some urgent district campaign desired by the native administration. In some areas of West Africa the mortality rate from tuberculosis is as high as fifty per cent of the deaths from all causes. A film that could deal with this serious problem in some beneficial degree was urgently needed ; talking or lecturing no matter how expert could not have the emphatic and lasting effect of the living picture that could reveal clearly how the disease starts, how it spreads, how it can be *prevented.*

Under the guidance of the chief medical experts in Africa, a film-script was prepared with real enthusiasm by the Unit ; a rather unpleasant subject was made intensely interesting by carrying the implied lessons through a human story of a happy native family menaced by the disease. This film *Fight Tuberculosis in the Home* is considered a pioneer in its kind, and is now profitably used in West African campaigns.

That vital health necessity, pure water in constant supply, suggested another worthy subject. A story around three villages was scripted to show how the progress in one village stirred desire in two others for similar improvement. With the help of the Chiefs and hundreds of eager natives, at times overwhelmingly enthusiastic, a valuable film resulted showing how a community, mainly by its own voluntary effort, could obtain a constant and copious supply of pure water.

In dealing with human illnesses the Unit's main function is to show that prevention is better than cure ; in the preventable diseases we reveal the root causes, the mosquitoes, the rats, the fleas, lice, ticks and bugs ; we expose the sad ignorance that permits the existence of stagnant uncovered water, exposed latrines, dirty and ill-ventilated dwellings. We show the advantages of well-planned housing, covered pit latrines, bush clearing, rubbish disposal and the home-made barless incinerator . . . in a word, *cleanliness.*

Child care is high in priority ; many films have been made dealing with pre-natal clinics, infant welfare, and physical education in the school. We are not confined to the human aspect only, for there is much to be

taught concerning animal welfare. Films on animal husbandry, the veterinary farm, and mixed farming, have each served urgent needs.

As each film nears completion we examine it keenly to discover whether we have erred by ending the screen message at the point where it has shown *how* improvement can be achieved. Not until we have revealed *why* this achievement is possible have we fulfilled our purpose.

A Misunderstanding

Apropos of this, it is worth recording that the pioneer and founder of the Colonial Film Unit, Mr. William Sellers, was stirred to use cinema as a means towards native enlightenment, when as Health Officer in Nigeria many years ago he had a startling experience.

A most serious plague had broken out, mortality was great. Rats were the carriers and had to be exterminated. The Government were offering twopence a head for dead rats; the natives brought them in by the score, but the numbers never seemed to lessen, in fact young live rats were also being brought in. Sellers then discovered that on the town outskirts rats were actually being bred and taken to the official collectors. To his amazement the breeders honestly thought they were aiding the cause ; if the Government wanted rats at twopence each, and dead ones at that, what more could the breeders do to help than supply live rats for the same price !

Surely a clear case for the need of knowing *why* as well as *how* !

BIOGRAPHICAL NOTES

GEORGE PEARSON, Hon.F.R.P.S.—Honorary Member British Film Academy, Honorary Member British Documentary, Senior Film Director Colonial Film Unit (C.O.I.) since 1940. Left Schoolmastering for Films 1911. Produced over 300 films, Great Britain, Hollywood, West Indies, Paris, Nice, Rome. Lectured on Cinema Art to many Societies, R.P.S., R.A.D.A., Oxford and Cambridge undergraduates, The British Institute Summer School, etc.

W. S. WALTON, G.M., M.D., B.Hy., D.P.H.—Medical Officer of Health and Principal School Medical Officer, Newcastle upon Tyne. Formerly Medical Officer of Health and School Medical Officer, West Bromwich. Has held appointments as Deputy Medical Officer of Health at Plymouth and Middlesbrough. Lecturer in charge, Public Health Department at Durham University. President of County Borough Group, Society of Medical Officers of Health, 1946–1947.

R. DOBBIN, B.A., D.P.A.—Public Relations Officer, Health Department, Newcastle upon Tyne. For many years has been responsible for organising local health educational work. Has developed public relations along original and practical lines. Finds contacts established as Liaison Officer to the Mass Radiography Unit very useful in establishing relations with commercial and industrial organisations, and voluntary groups. Recently appointed Assistant Secretary, Newcastle upon Tyne Regional Hospital Board.

Hlth. Educ. J., 1949, 7, 43—45

REASONS FOR REFUSING DIPHTHERIA IMMUNISATION

By W. S. Walton, G.M., M.D., B.Hy., D.P.H., *Medical Officer of Health, Newcastle upon Tyne* and
R. Dobbin, B.A., D.P.A., *formerly Public Relations Officer, Health Department, Newcastle upon Tyne.*

In 1946 an enquiry was made in Newcastle upon Tyne into the reasons which prompted mothers to bring their children to the diphtheria immunisation clinics.* From this it was clear that the personal approach of the health visitor, or doctor or nurse at the child welfare centre, was the most effective. Next came the birthday greetings card, and finally publicity through the radio, press, cinema, posters, etc. After the relative success of different avenues of approach had been assessed, however, it seemed obvious that the next thing to do was to try to discover why people did not have their children immunised. The primary aims of the enquiry were to find out whether publicity was reaching the people, how they were reacting to it, and why they had not taken advantage of the facilities provided. In Newcastle upon Tyne there are eleven diphtheria immunisation clinics at which one session is held every week. In addition, general practitioners may immunise children free of charge and debit the cost to the Health Committee. Local publicity is carried out through the health visitors, child welfare clinics, day nurseries, schools, press, cinemas, and by means of posters and leaflets.

The enquiry was conducted by health visitors and covered 308 unimmunised children between the ages of 1½ and 5 years. Each mother or guardian was asked the reason why the child had not been immunised and the replies are summarised as follows:

Reasons given for non-immunisation of child	*No.*	*Percentage*
(a) Had not time to take child	99	32.1
(b) Kept putting off ; had not bothered ; uninterested	78	25.4
(c) Not convinced of the value of immunisation ...	58	18.8
(d) Afraid of harmful effects of injection	28	9.1
(e) Child in ill-health	23	7.5
(f) Mother afraid to see child inoculated	8	2.6
(g) Did not know where to go	5	1.6
(h) No reason given or indefinite	9	2.9
Total	308	100.0

* *Health Educ. J.*, 1947, **5**, 106–109.

The classification is based upon the answers given to questions asked, and no doubt some mothers cloaked their apathy by saying they had not time, or by giving some other reason.

Some Comments on the Reasons Given

(a) *Those who " had not time "*

In this group of 99 (one-third of all the cases) the average number of children in the family was 3.8, ranging from one child to nine children. It is difficult to comment on this group ; in some cases the family is large and the mother harassed with household duties ; in others, the true answer might have been that the mother had not " made " the time. Eighty-five of the mothers, however, promised to bring their children for immunisation ; others were doubtful or preferred to wait until the child went to school.

(b) *Those who kept " putting off "*

In many of these 78 cases (one quarter of the total), the home conditions were very poor, the parents lethargic and uninterested. Thirty-four of the children were over three years of age. In 68 cases the mother promised to bring the child for immunisation.

(c) *Those not convinced of the value of immunisation*

Of these 58 cases (almost one-fifth of the total), 29 gave the reason that the father objected ; others thought vaccination was sufficient ; but most could give no explanation at all. Four mothers agreed to bring their children for immunisation and six said they would consider it, but the majority refused to change their view.

(d) *Those afraid of harmful consequences to the child*

Of these 28 cases (one-eleventh of the total), 10 said that other children in their family had suffered reactions from immunisation. Others gave no reason except their own feeling. Six mothers promised to bring their children for immunisation and seven agreed to think it over.

(e) *Child in ill-health*

Of these 23 cases (one-thirteenth of the total), 10 appeared to be genuine ; the remaining 13 seemed to be finding an excuse for their own delay, as in most cases the child was over two years of age and the illness quoted was recent and temporary. In 21 cases the mother promised to bring the child for immunisation as soon as it had recovered.

(f), (g) and (h) *Other reasons*

In the remaining 22 cases (one-fourteenth of the total), varied or indefinite reasons were given, or no reason was given at all. In 8 of these

cases the mother stated she could not bear to see the child inoculated ; in 5 cases the mother said she did not know where to go. In 17 cases the mother promised to bring the children for immunisation.

Conclusions

It is interesting to note that 236 (77 per cent) of the mothers were not attending the child welfare centres, 39 (12 per cent) attended irregularly, and only 33 (11 per cent) attended regularly.

The fact that 201 mothers promised to bring their children for immunisation indicates that the reasons given in many cases are excuses, and that with a little extra effort on the part of the mother a greater percentage of children could be immunised. Unfortunately, however, up to the time of writing (some six months after the enquiry was completed), only 20 mothers (10 per cent of those concerned) have fulfilled their further promises. So, although allowance must be made for the claims upon the mother during the present difficult times, especially where the family is large, it seems that many of these 201 promises were given glibly and mainly in the hope of placating the visitor and possibly cutting short the interview.

It will be noted that of the 107 who made no promise at all, there were 76 who were not convinced of the value of immunisation or were afraid of harmful consequences. It is clear, therefore, that there is a number of people who do not intend to have their child immunised because of the prejudice of the mother or father ; in many cases the objection of the father is based upon his experiences in the armed Forces. Only constant publicity, education and personal pressure will persuade these objectors to change their opinion.

Recommendations

Arrangements might be made with voluntary associations for the provision of helpers who would be willing to take children for immunisation where the mother was genuinely prevented from doing so, or who might stand by in the home while she went to the clinic herself.

Constant follow-up methods should be employed, especially amongst those people not attending the child welfare centres.

Education and publicity should be specially directed to the groups who are not convinced of the value of immunisation or are afraid of the harmful consequences to the child.

Where a promise to attend for immunisation has been given but not kept, arrangements might be made for the child to be immunised in its own home.

FILM STRIPS

SEX EDUCATION SERIES. By Cyril Bibby, M.A., M.Sc., F.L.S. Produced by Common Ground Ltd. (Distributors: The Educational Supply Association Ltd., 181 High Holborn, W.C.1. Price 15s. each with teaching notes.)

The author indicates in his preface to this series of strips that each strip should be shown under its own sub-title; that is that the emphasis should be on how life is handed on, with special reference to human reproduction rather than focused initially on the word 'sex'. This is probably good advice because the content of the strips treats the subject with clarity and honesty, making nothing sensational or difficult about it, yet giving a real appreciation of a function which is fundamental to man as well as to other living creatures.

The presentation of material is scientific without being obscure, reassuring in that it stresses the dignity of sex without any of the hedging and obscurity so often characteristic of this subject. It even deals clearly and diagrammatically with the process of coitus which is more often than not omitted.

The very clear notes for use by the teacher are almost full enough to be in the nature of a text book, and there is a good bibliography at the end of each set of notes.

Extract of Content

Part 1 (CGA 340) How Life is Handed On.

A series of frames showing how living things produce offspring, illustrated by plants and animals, including man. Emphasis is on the development of reproductive cells, mating and the care of the fertilised egg.

Part 2 (CGA 339) Human Reproduction.

A more detailed development of the facts concerning man. The growth of egg-cells; sperm; male and female organs; coitus; what happens to the fertilised egg. Development of the foetus within the uterus; birth of the baby. A few frames on twins. The last eight frames deal with growth, and changes at puberty including the menstrual cycle.

Part 3 Sex and Social Life. (In preparation.)

The author indicates that Part 1 is intended for younger children, Part 2 for those over eleven years, and Part 3 for older children and adolescents. In the present state of knowledge it would certainly be worth while to show both the available strips even to older children. They form a very good sequence and the facts they represent would be appreciated by most adolescents and might with profit be studied by many adults.

W. M. W.

FILMS

The reviewer of the film POLIO—DIAGNOSIS AND MANAGEMENT (reviewed under the title POLIOMYELITIS in our last issue) regrets that, as a result of error in transmission of information from the Production Company, the film was criticised adversely as falling between two stools in catering both for a general and for a specialised medical audience. In fact, the film was intended only for a specialised audience, and is not available for general distribution from the Central Film Library. As a general film for doctors and nurses, it fulfils its purpose well, and much of the adverse criticism in our review is no longer relevant.

BOOK REVIEWS

ANATOMY, by A. D. Le Vay, M.S., F.R.C.S. (Hodder and Stoughton for English Universities Press. 1948. Pp. 299. Illus. Coloured Plates 12. Price 4s. 6d.)

This small book provides a simple and readable account of the structure of the human body and is remarkably comprehensive for its size. 160 illustrations, in addition to the excellent colour plates, greatly assist the reader who lacks access to the dissected body. The standard of the illustrations is, with few exceptions, high; occasional inaccuracies are however apparent as, for example, in Plate 4 where the popliteal artery is depicted lying superficial to the medial hamstring muscles. The text is clear and concise, enlivened here and there by well chosen analogies and mention of surgical applications. The author emphasises the interdependence of structure and function and, very rightly, aims at interesting the reader in the anatomy of the living rather than that of the cadaver.

The early chapters deal with the scope of the subject, methods of study and terms of reference, and there is a short historical review. Thereafter the description is largely regional, though certain subjects, such as the nervous system, are approached systematically. A short chapter on the reproductive system and the principles of development completes the book.

The text shows a few lapses from accuracy: for example the suprarenal cortex is said to be thin, and the pineal body is described as being an outgrowth from the roof of the fourth ventricle.

This book is certainly to be recommended both for the intelligent reader with an amateur interest in biology and also for the student proceeding to a more advanced study of human anatomy.

E. L. PATTERSON.

PRACTICAL ANATOMY, PHYSIOLOGY AND HYGIENE, by Janet K. Raeburn. (John Murray. 1948. Pp. 216. Diags. Price 6s.)

Teachers of anatomy, physiology and hygiene for the Pre-Nursing Course will find this book an invaluable practical aid. Both author and publishers are to be congratulated on the publication of a useful and well-composed book.

P. M. TAYLOR.

A TEXTBOOK OF GYMNASTICS Vol. II, by K. A. Knudsen, Translated by Braae Hansen. (J. & A. Churchill Ltd. 1948. Pp. 204. 145 Illus. Price 12s. 6d.)

With the publication of Volume II covering Heaving and Balance Exercises, Marching, Running, Jumping, Vaulting and Agility, the publisher justly claims that Knudsen now provides a complete syllabus of physical training.

Considering the criticisms often levelled in Scandinavian countries at English physical training for its preoccupation with ball games, it is agreeable to find that Knudsen considers that 'leg exercises' e.g. running, dancing, with their associated movements in the pelvis and lumbar region involving four fifths of all skeletal muscles, should take up such a share of the available time for training. The 'leg exercise' muscle work is fully analysed in his sections on Marching, Running and Jumping where his strictures on landings with knees forward will add fuel to the perennial discussions on this subject.

But the outstanding section is that on Heaving. Here the necessity of heaving for harmonious development is insisted on, while the pit-falls to be avoided are clearly marked. Heaves on all types of apparatus are included and their suitability for women and children always considered. Illustrations are numerous and excellent, and the essentials of the anatomy are readily mastered.

About a third of the book is devoted to Vaulting and Agility. The material

follows the usual lines and considering we are informed that agilities in Denmark have formed a part of the national system for over a hundred years, there is a feeling that more could have been made of this section.

A. W. Brocks.

Social History of the School Meals Service, by F. Le Gros Clark, M.A. (Published for the London Council of Social Service by the National Council of Social Service, 26 Bedford Square, W.C.1. 1948. Pp. 28. Illus. Price 2s.)

Mr. Le Gros Clark has increased our debt to him by directing our attention to the *Social History of the School Meals Service*.

It is always helpful to have a clear idea of the past of any service if its present stage of development is to be properly understood and if its future is to be wisely planned, for history is a continuing process and the past cannot be ignored.

From the smallest beginnings and entirely as a voluntary effort, this service has grown in importance so that it now has achieved the dignity of a compulsory educational service with official Regulations defining its object and its scope.

The book is well produced and is illustrated by excellent photographs. The happy faces of the children in the frontispiece will be the author's reward for his work on their behalf.

E. K. Macdonald.

Towards Public Understanding of Casework, by Viola Paradise. (Russell Sage Foundation, 130 East 22nd Street, New York 10. 1948. Pp. 242. Price $2.)

This book is one of a series of Studies in Public Relations produced by The Russell Sage Foundation. In it Miss Paradise has attempted a much neglected task, that of explaining what is meant by casework to the general public—whether interested, antagonistic or would-be clients. She has produced a book which is both interesting and readable; this last is a rare quality in Social Work literature. She describes the methods employed in Cleveland to 'get across' to the public the meaning and value of social casework in its modern sense—a personal service dissociated from relief. The methods employed by the Cleveland caseworkers range from courageous personal interpretations, made at public meetings, in shops and to casual enquirers in railway trains to the more studied propaganda through the radio and press. It includes a description of that most American of methods the Public Opinion Poll, the results of which should do much to relieve the inferiority feelings of the profession. Miss Paradise traces the change in opinion towards casework over the last twenty-five years and it is interesting to note that several Family Service Associations have proved the success of charging a fee for their services to those clients in a position to pay it, a far cry from the time when casework was wholly associated with relief. Professional caseworkers, especially supervisors and those responsible for propaganda will find this book stimulating—especially, I suspect, the case history quoted in Appendix B.

S. M. Hale.

Elementary First Aid for the Housewife, by Dr. Gladys Danby, M.B.E. (St. John Ambulance Association. 1947. Pp. 30. Illus. Price 1s. 1½d. inc. postage.)

This small manual is most useful for home teaching, consisting of four elementary talks giving excellent advice on the action to be taken for the accidents likely to happen in any home.

It is most practical and with the aid of pictures clearly sets out the contents of the First Aid Cupboard and certain First Aid treatments.

M. J. Merry.